

FCC Test Report (DFS Band)

Report No.: RFBDHL-WTW-P20080206A-1

FCC ID: GZ5NVG578HLX

Test Model: NVG578HLX

Series Model: NVG568HLX

Received Date: Aug. 11, 2020

Test Date: Aug. 14, 2020 to Apr. 13, 2021

Issued Date: May 24, 2021

Applicant: ARRIS

Address: 2500 Walsh Ave., Santa Clara, CA 95051 United States

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory

Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan

Test Location (1): E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan

Test Location (2): No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin
Chu Hsien 307, Taiwan

**FCC Registration /
Designation Number:** 723255 / TW2022 for Test Location (1)
736135 / TW0004 for Test Location (2)



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Release Control Record

Issue No.	Description	Date Issued
RFBDHL-WTW-P20080206A-1	Original release.	May 24, 2021

1 Certificate of Conformity

Product: 2.5G PON GATEWAY
Brand: ARRIS
Test Model: NVG578HLX
Series Model: NVG568HLX
Sample Status: ENGINEERING SAMPLE
Applicant: ARRIS
Test Date: Aug. 14, 2020 to Apr. 13, 2021
Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10: 2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by :  , **Date:** May 24, 2021
Claire Kuan / Specialist

Approved by :  , **Date:** May 24, 2021
Clark Lin / Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -15.22 dB at 0.15391 MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.3 dB at 5146.00 MHz and 5351.11 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is i-pex(MHF) not a standard connector.

Note:

- For U-NII-2A and U-NII-2C band compliance with rule 15.407(b) of the band-edge items, the test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.9 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.4 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.3 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (DFS Band)

Product	2.5G PON GATEWAY
Brand	ARRIS
Test Model	NVG578HLX
Series Model	NVG568HLX
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	12 Vdc from power adapter
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax HE mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to 600 Mbps 802.11ac: up to 3466.7 Mbps 802.11ax: up to 4803.9 Mbps
Operating Frequency	5.25 ~ 5.32 GHz, 5.50 ~ 5.72 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 16 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 8 802.11ac (VHT80), 802.11ax (HE80): 4 802.11ac (VHT160), 802.11ax (HE160): 2
Output Power	CDD Mode: 5.25 ~ 5.32 GHz: 249.035 mW 5.5 ~ 5.72 GHz: 248.995 mW Beamforming Mode: 5.25 ~ 5.32 GHz: 198.304 mW 5.5 ~ 5.72 GHz: 194.251 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

- This report is prepared for FCC Class II permissive change. The difference compared with the Report No.: RFBDDL-WTW-P20080206-1 as the following:
 - ◆ Add DFS band <5250~5350 MHz & 5470~5725 MHz> by software.
 - ◆ Enabling bandwidth 160 MHz mode.
- According to above conditions, for DFS band all of test items need to be performed and all data was verified to meet the requirements.
- The EUT has below radios as following table:

Radio 1	Radio 2
WLAN 2.4GHz	WLAN 5GHz

- Simultaneously transmission condition.

Condition	Technology	
1	WLAN (2.4GHz)	WLAN (5GHz)

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

5. The EUT has below model names, which are identical to each other in all aspects except for the following information:

Different	Model No. NVG578HLX	Model No. NVG568HLX
Feature	5G High power	5G High power
Target Market	NA	NA
Key IC	Main IC: BCM68360 LD: BCM68901 WIFI 2.4G: BCM6710 WIFI 5G : BCM43684	Main IC: BCM68360 WIFI 2.4G: BCM6710 WIFI 5G : BCM43684
2.5 G Phy	BCM54991EL	BCM54991EL
Slic	Microsemi Le9642	Microsemi Le9642
Flash	256MB	256MB
DDR	512MB	512MB
802.11ax 2.4G	3 x 3	3 x 3
802.11ax 5G	4 x 4	4 x 4
B+ BOSA with STIA SC/APC	yes	no
5G FEM	SKY85743-21	SKY85743-21
USB 3.0	1	1
VOIP port	2	2
LAN port	RJ45 with 1 LED 2.5G LAN x1 1G LAN x3	RJ45 with 1 LED 2.5G LAN x1 1G LAN x3
Power on/off button	yes	yes
WPS button	yes	yes
Reset button	yes	yes
LEDs	Power, Broadband, WAN, WiFi, Voice	Power, Broadband, WAN, WiFi, Voice

From the above models, model: **NVG578HLX** was selected as representative model for the test and its data was recorded in this report.

6. The EUT must be supplied with a power adapter as following table:

Brand	Model No.	Spec.
NetBit	NBS36J120300VU	Input: 100-120 Vac, 1 A, 50-60 Hz Output: 12 Vdc, 3 A DC Output cable: Unshielded, 2 m

7. The directional antenna gain, please refer to the following table:

Frequency Range (GHz)	Directional Antenna Gain (dBi) (Total Polarization)	Antenna Type	Antenna Connector
5.15 ~ 5.25	7.23	Ant. 0/1: PIFA Ant. 2/3: Dipole	Ant. 0/1: RF switch Ant. 2/3: i-pex(MHF)
5.25 ~ 5.35	6.98		
5.47 ~ 5.725	7.09		
5.725 ~ 5.85	6.99		

Note: More detailed information, please refer to antenna specification.

8. The antennas provided to the EUT, please refer to the following table:

Ant. Set	RF Chain No.	Ant. Net Gain (dBi)	Freq. Range (GHz)	Ant. Type	Connector Type	Cable Length (mm)
0	5G Chain0	3.93	5.15~5.25	PIFA	RF switch	on-board no cable
		3.45	5.25~5.35			
		4.15	5.47~5.725			
		4.33	5.725~5.85			
1	5G Chain1 / 2.4G Chain 2	4.69	2.4~2.4835	PIFA	RF switch	on-board no cable
		2.77	5.15~5.25			
		3.33	5.25~5.35			
		4.33	5.47~5.725			
2	5G Chain2 / 2.4G Chain 1	4.54	5.725~5.85	Dipole	i-pex(MHF)	200
		2.27	2.4~2.4835			
		2.65	5.15~5.25			
		2.86	5.25~5.35			
3	5G Chain3 / 2.4G Chain 0	3.12	5.47~5.725	Dipole	i-pex(MHF)	200
		3.12	5.725~5.85			
		3.36	2.4~2.4835			
		2.83	5.15~5.25			
		2.77	5.25~5.35			
		2.65	5.47~5.725			
		2.83	5.725~5.85			

9. The EUT incorporates a MIMO function.

2.4GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11b	3TX	3RX
802.11g	3TX	3RX
802.11n (HT20)	3TX	3RX
802.11n (HT40)	3TX	3RX
VHT20	3TX	3RX
VHT40	3TX	3RX
802.11ax (HE20)	3TX	3RX
802.11ax (HE40)	3TX	3RX
5GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	4TX	4RX
802.11n (HT20)	4TX	4RX
802.11n (HT40)	4TX	4RX
802.11ac (VHT20)	4TX	4RX
802.11ac (VHT40)	4TX	4RX
802.11ac (VHT80)	4TX	4RX
802.11ac (VHT160)	4TX	4RX
802.11ax (HE20)	4TX	4RX
802.11ax (HE40)	4TX	4RX
802.11ax (HE80)	4TX	4RX
802.11ax (HE160)	4TX	4RX

Note:

1. All of modulation mode support beamforming function except 802.11a/b/g modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz), 802.11ac mode for 20MHz (40MHz, 80MHz, 160MHz) and 802.11ax mode for 20MHz (40MHz, 80MHz, 160MHz), therefore the manufacturer will control the power for 802.11n/ac mode is the same as the 802.11ax mode or more lower than it and investigated worst case to representative mode in test report. (Final test mode refer to section 3.2.1)

10. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

11. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Description of Test Modes

FOR 5250 ~ 5320MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40)802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency
58	5290 MHz

1 channel is provided for 802.11ac (VHT160), 802.11ax (HE160):

Channel	Frequency
50	5250 MHz

FOR 5500 ~ 5720MHz

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz	144	5720 MHz

6 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz	142	5710 MHz

3 channels are provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	122	5610 MHz
138	5690 MHz		

1 channel is provided for 802.11ac (VHT160), 802.11ax (HE160):

Channel	Frequency
114	5570 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥1G**: Radiated Emission above 1GHz
RE<1G: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission
APCM: Antenna Port Conducted Measurement

Radiated Emission Test (Above 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11a	5250-5320	52 to 64	52, 60, 64	OFDM	BPSK	6Mb/s
802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
802.11ax (HE40)		54 to 62	54, 62	OFDMA	BPSK	MCS0
802.11ax (HE80)		58	58	OFDMA	BPSK	MCS0
802.11ax (HE160)		50	50	OFDMA	BPSK	MCS0
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6Mb/s
802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	BPSK	MCS0
802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	BPSK	MCS0
802.11ax (HE80)		106 to 138	106, 122, 138	OFDMA	BPSK	MCS0
802.11ax (HE160)		114	114	OFDMA	BPSK	MCS0

Radiated Emission Test (Below 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE80)	5250-5320 5500-5720	58, 106 to 138	106	OFDMA	BPSK	MCS0

Power Line Conducted Emission Test:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE80)	5250-5320 5500-5720	58, 106 to 138	106	OFDMA	BPSK	MCS0

Antenna Port Conducted Measurement:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11a	5250-5320	52 to 64	52, 60, 64	OFDM	BPSK	6Mb/s
802.11ac (VHT20) (output power only)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
802.11ac (VHT40) (output power only)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (VHT80) (output power only)		58	58	OFDM	BPSK	MCS0
802.11ac (VHT160) (output power only)		50	50	OFDM	BPSK	MCS0
802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
802.11ax (HE40)		54 to 62	54, 62	OFDMA	BPSK	MCS0
802.11ax (HE80)		58	58	OFDMA	BPSK	MCS0
802.11ax (HE160)		50	50	OFDMA	BPSK	MCS0
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6Mb/s
802.11ac (VHT20) (output power only)		100 to 144	100, 116, 140, 144	OFDM	BPSK	MCS0
802.11ac (VHT40) (output power only)		102 to 142	102, 110, 134, 142	OFDM	BPSK	MCS0
802.11ac (VHT80) (output power only)		106 to 138	106, 138	OFDM	BPSK	MCS0
802.11ac (VHT160) (output power only)		114	114	OFDM	BPSK	MCS0
802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	BPSK	MCS0
802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	BPSK	MCS0
802.11ax (HE80)		106 to 138	106, 138	OFDMA	BPSK	MCS0
802.11ax (HE160)		114	114	OFDMA	BPSK	MCS0

Beamforming Mode (output power only)						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ac (VHT20)	5250-5320	52 to 64	52, 60, 64	OFDM	BPSK	MCS0
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (VHT80)		58	58	OFDM	BPSK	MCS0
802.11ac (VHT160)		50	50	OFDM	BPSK	MCS0
802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
802.11ax (HE40)		54 to 62	54, 62	OFDMA	BPSK	MCS0
802.11ax (HE80)		58	58	OFDMA	BPSK	MCS0
802.11ax (HE160)		50	50	OFDMA	BPSK	MCS0
802.11ac (VHT20)	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	MCS0
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	MCS0
802.11ac (VHT80)		106 to 138	106, 138	OFDM	BPSK	MCS0
802.11ac (VHT160)		114	114	OFDM	BPSK	MCS0
802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	BPSK	MCS0
802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	BPSK	MCS0
802.11ax (HE80)		106 to 138	106, 138	OFDMA	BPSK	MCS0
802.11ax (HE160)		114	114	OFDMA	BPSK	MCS0

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE $\geq$ 1G	25deg. C, 68%RH	120Vac, 60Hz	Nelson Teng
RE<1G	23deg. C, 71%RH	120Vac, 60Hz	Ryan Du
PLC	25deg. C, 68%RH	120Vac, 60Hz	Eagle Chen
APCM	25deg. C, 60%RH	120Vac, 60Hz	Kevin Ko

3.3 Duty Cycle of Test Signal

Duty cycle of test signal is > 98%, duty factor shall be considered.

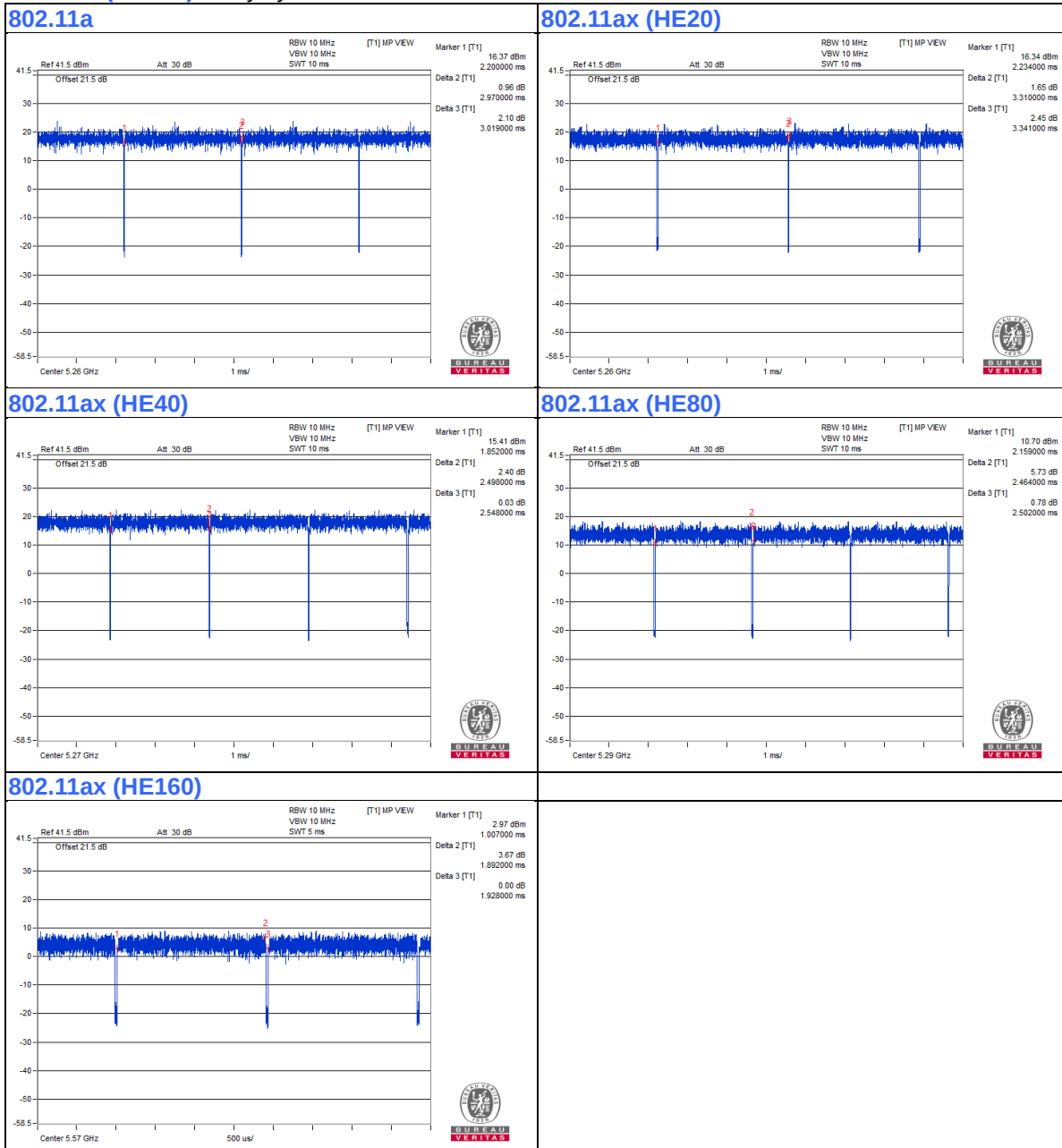
802.11a: Duty cycle = 2.97 ms/3.019 ms = 0.984

802.11ax (HE20): Duty cycle = 3.31 ms/3.341 ms = 0.991

802.11ax (HE40): Duty cycle = 2.498 ms/2.548 ms = 0.98

802.11ax (HE80): Duty cycle = 2.464 ms/2.502 ms = 0.985

802.11ax (HE160): Duty cycle = 1.892 ms/1.928 ms = 0.981



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

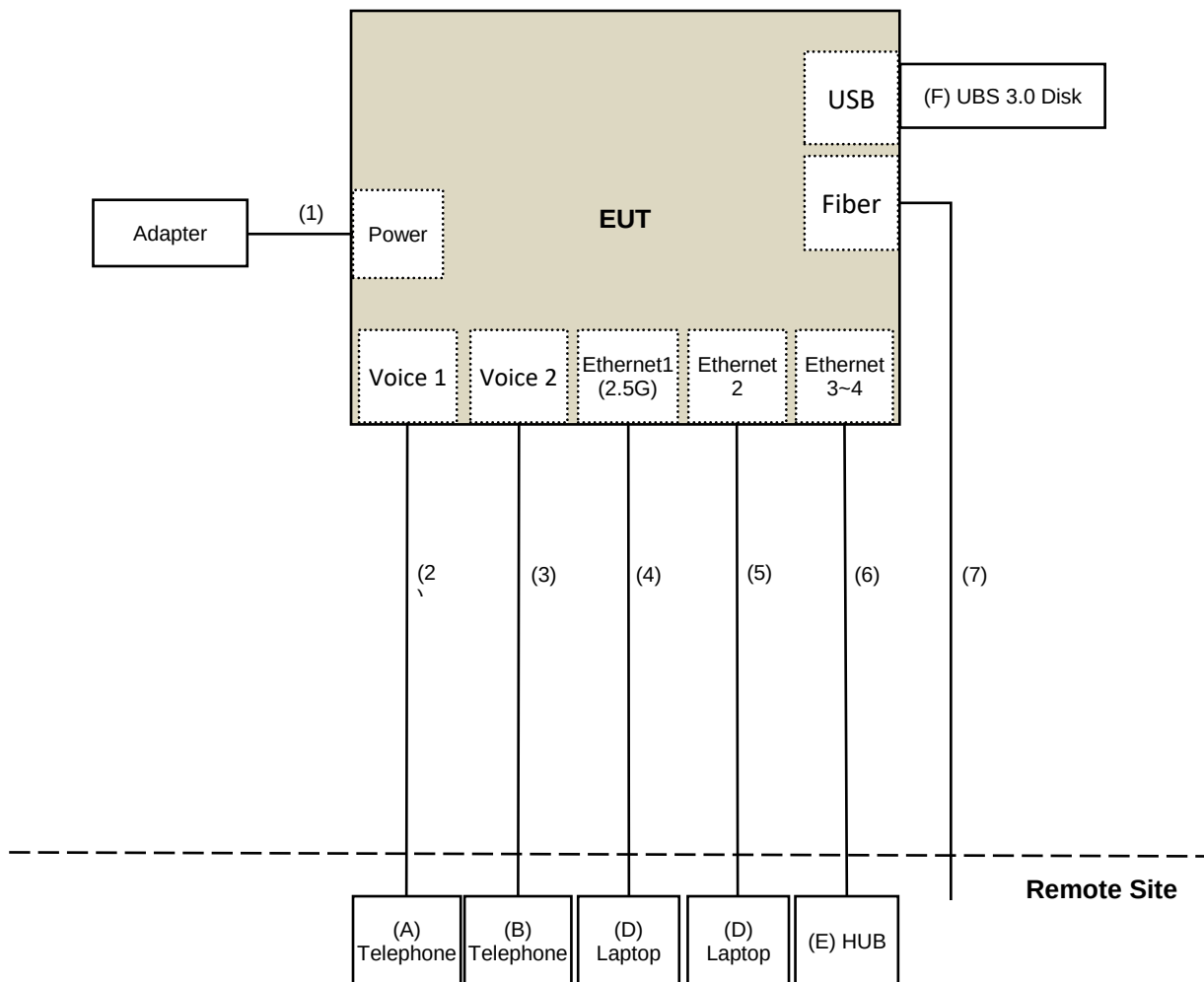
ID	Product	Brand	Model No.	Serial No	FCC ID	Remarks
A.	Telephone	Romeo	TE-812	97285638	NA	Provided by Lab
B.	Telephone	Romeo	TE-812	97280903	NA	Provided by Lab
C.	Laptop	DELL	PP36S	25733582128	NA	Provided by Lab
D.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
E.	HUB	ZyXEL	GS1100-16	S150H44000046	FCC DoC	Provided by Lab
F.	UBS 3.0 Disk	Transcend	16GB JetFlash 700	F80093 0291	NA	Provided by Lab

Note:

1. All power cords of the above support units are non-shielded (1.5m).

ID	Descriptions (Cables)	Qty	Length (m)	Shielding (Yes/No)	Cores (Number)	Remarks
1	DC Cable	1	2	No	0	Supplied by client
2	RJ-11 Cable	1	10	No	0	Provided by Lab
3	RJ-11 Cable	1	10	No	0	Provided by Lab
4	RJ-45 Cable	1	10	No	0	Provided by Lab
5	RJ-45 Cable	1	10	No	0	Provided by Lab
6	RJ-45 Cable	2	10	No	0	Provided by Lab
7	Fiber Cable	1	10	No	0	Provided by Lab

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards and References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and references:

Test Standard:

FCC Part 15, Subpart E (15.407)

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

References Test Guidance:

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v02r01		Field Strength at 3m	
		PK:74 (dBuV/m)	AV:54 (dBuV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBuV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2(dBuV/m) ^{*1} PK: 105.2 (dBuV/m) ^{*2} PK: 110.8(dBuV/m) ^{*3} PK: 122.2 (dBuV/m) ^{*4}
5725~5850 MHz	15.407(b)(4)(i)	PK:-27 (dBm/MHz) ^{*1} PK:10 (dBm/MHz) ^{*2} PK:15.6 (dBm/MHz) ^{*3} PK:27 (dBm/MHz) ^{*4}	PK: 68.2(dBuV/m) ^{*1} PK:105.2 (dBuV/m) ^{*2} PK: 110.8(dBuV/m) ^{*3} PK:122.2 (dBuV/m) ^{*4}
^{*1} beyond 75 MHz or more above of the band edge.		^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.		^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

Note:

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).}$$

4.1.2 Test Instruments

For Bandedge Test: (Vertical data of U-NII-2C & U-NII-3 band)

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 06, 2020	July 05, 2021
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier EMC	EMC12630SE	980384	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-1200	160922	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-2000	180601	June 09, 2020	June 08, 2021
RF Cable	EMC104-SM-SM-6000	180602	June 09, 2020	June 08, 2021
Spectrum Analyzer Keysight	N9030A	MY54490679	July 13, 2020	July 12, 2021
Pre-Amplifier EMC	EMC184045SE	980387	Jan. 15, 2020	Jan. 14, 2021
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 24, 2019	Nov. 23, 2020
RF Cable	EMC102-KM-KM-1200	160924	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC-KM-KM-4000	200214	Mar. 11, 2020	Mar. 10, 2021
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 3.
3. Tested Date: Aug. 14 to 17, 2020

For Radiated Emission & Bandedge (Except for vertical data of U-NII-2C & U-NII-3 band) Test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 06, 2020	July 05, 2021
Pre-Amplifier EMCI	EMC001340	980142	May 25, 2020	May 24, 2021
Loop Antenna Electro-Metrics	EM-6879	264	Feb. 18, 2020	Feb. 17, 2021
RF Cable	NA	LOOPCAB-001	Jan. 08, 2020	Jan. 07, 2021
RF Cable	NA	LOOPCAB-002	Jan. 08, 2020	Jan. 07, 2021
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	Apr. 28, 2020	Apr. 27, 2021
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Nov. 11, 2019	Nov. 10, 2020
RF Cable	8D	966-3-1	Mar. 17, 2020	Mar. 16, 2021
RF Cable	8D	966-3-2	Mar. 17, 2020	Mar. 16, 2021
RF Cable	8D	966-3-3	Mar. 17, 2020	Mar. 16, 2021
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Sep. 24, 2020	Sep. 23, 2021
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-1500	180504	Apr. 29, 2020	Apr. 28, 2021
RF Cable	EMC104-SM-SM-2000	180601	June 09, 2020	June 08, 2021
RF Cable	EMC104-SM-SM-6000	180602	June 09, 2020	June 08, 2021
Spectrum Analyzer Keysight	N9030A	MY54490679	July 13, 2020	July 12, 2021
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 15, 2020	Jan. 14, 2021
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 24, 2019	Nov. 23, 2020
RF Cable	EMC102-KM-KM-1200	160924	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC-KM-KM-4000	200214	Mar. 11, 2020	Mar. 10, 2021
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 3.
3. Tested Date: Oct. 16 to 17, 2020

For other test items:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Power meter Anritsu	ML2495A	1529002	July 22, 2020	July 21, 2021
Power sensor Anritsu	MA2411B	1339443	July 22, 2020	July 21, 2021
10dB Attenuator Woken	MDCS18N-10	MDCS18N-10-01	Apr. 13, 2021	Apr. 12, 2022
AC Power Source Extech Electronics	6905S	1991551	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 14, 2021	Jan. 13, 2022
True RMS Clamp Meter FLUKE	325	31130711WS	June 06, 2020	June 05, 2021
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA

- NOTE:**
1. The test was performed in Oven room 2.
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. Tested Date: Apr. 13, 2021

4.1.3 Test Procedure

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

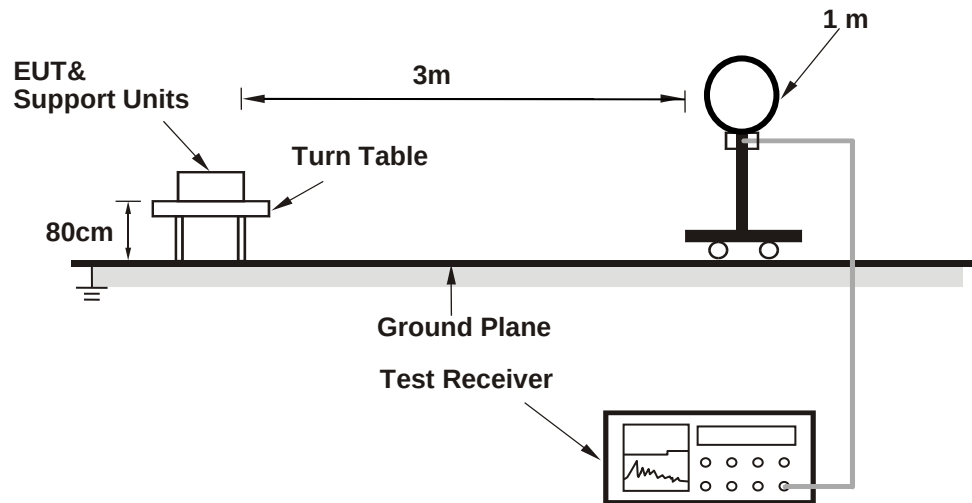
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

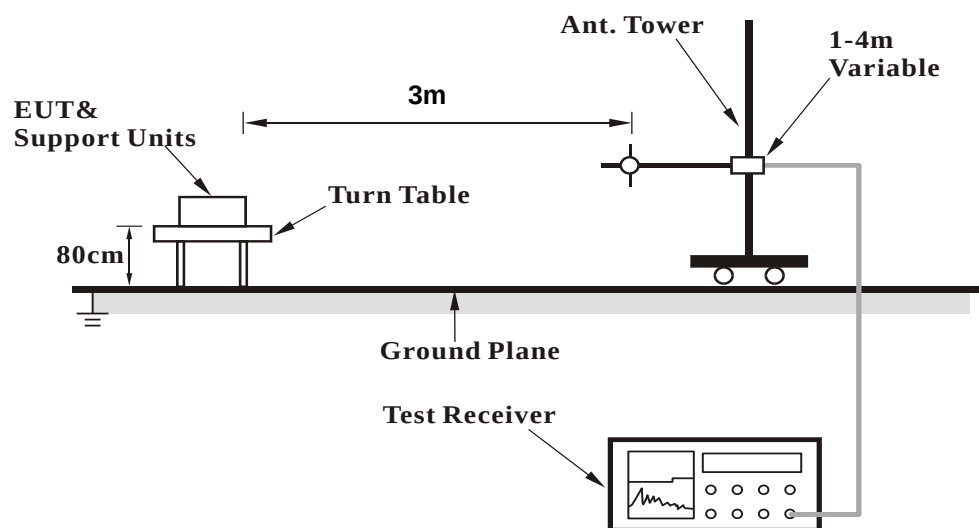
No deviation.

4.1.5 Test Setup

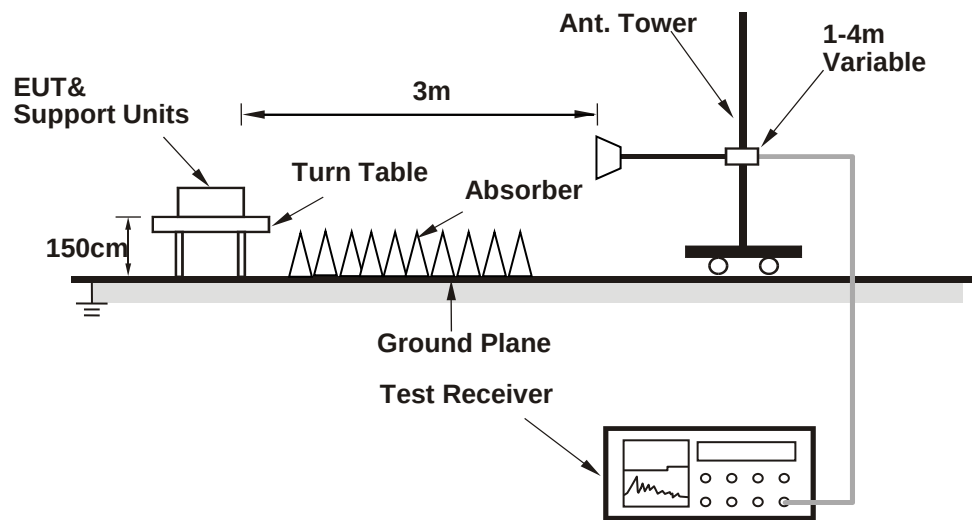
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Condition

- Connected the EUT with the Laptop which is placed on remote site.
- Controlling software (accessMTool_REL_3_2_0_0) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

RF Mode	TX 802.11a	Channel	CH 52 : 5260 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	53.6 PK	74.0	-20.4	1.61 H	51	49.4	4.2
2	5150.00	42.7 AV	54.0	-11.3	1.61 H	51	38.5	4.2
3	*5260.00	111.5 PK			1.61 H	51	107.7	3.8
4	*5260.00	102.0 AV			1.61 H	51	98.2	3.8
5	#10520.00	50.9 PK	68.2	-17.3	1.74 H	174	37.5	13.4
6	15780.00	52.3 PK	74.0	-21.7	1.57 H	147	38.1	14.2
7	15780.00	38.7 AV	54.0	-15.3	1.57 H	147	24.5	14.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	53.6 PK	74.0	-20.4	1.74 V	272	49.4	4.2
2	5150.00	44.5 AV	54.0	-9.5	1.74 V	272	40.3	4.2
3	*5260.00	115.9 PK			1.74 V	272	112.1	3.8
4	*5260.00	106.7 AV			1.74 V	272	102.9	3.8
5	#10520.00	49.5 PK	68.2	-18.7	1.71 V	263	36.1	13.4
6	15780.00	49.7 PK	74.0	-24.3	1.88 V	240	35.5	14.2
7	15780.00	37.4 AV	54.0	-16.6	1.88 V	240	23.2	14.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11a	Channel	CH 60 : 5300 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	110.1 PK			1.55 H	59	106.4	3.7
2	*5300.00	101.1 AV			1.55 H	59	97.4	3.7
3	10600.00	50.9 PK	74.0	-23.1	1.75 H	194	37.5	13.4
4	10600.00	38.3 AV	54.0	-15.7	1.75 H	194	24.9	13.4
5	15900.00	52.3 PK	74.0	-21.7	1.53 H	166	38.8	13.5
6	15900.00	38.7 AV	54.0	-15.3	1.53 H	166	25.2	13.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	116.3 PK			1.60 V	273	112.6	3.7
2	*5300.00	107.2 AV			1.60 V	273	103.5	3.7
3	10600.00	49.7 PK	74.0	-24.3	1.71 V	260	36.3	13.4
4	10600.00	36.9 AV	54.0	-17.1	1.71 V	260	23.5	13.4
5	15900.00	50.1 PK	74.0	-23.9	1.88 V	248	36.6	13.5
6	15900.00	37.5 AV	54.0	-16.5	1.88 V	248	24.0	13.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

RF Mode	TX 802.11a	Channel	CH 64 : 5320 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	110.9 PK			1.53 H	50	107.1	3.8
2	*5320.00	101.6 AV			1.53 H	50	97.8	3.8
3	5350.00	58.2 PK	74.0	-15.8	1.53 H	50	54.5	3.7
4	5350.00	43.1 AV	54.0	-10.9	1.53 H	50	39.4	3.7
5	10640.00	50.3 PK	74.0	-23.7	1.76 H	178	36.8	13.5
6	10640.00	37.9 AV	54.0	-16.1	1.76 H	178	24.4	13.5
7	15960.00	52.4 PK	74.0	-21.6	1.62 H	153	38.9	13.5
8	15960.00	39.2 AV	54.0	-14.8	1.62 H	153	25.7	13.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	116.3 PK			1.64 V	274	112.5	3.8
2	*5320.00	107.0 AV			1.64 V	274	103.2	3.8
3	5350.00	63.2 PK	74.0	-10.8	1.64 V	274	59.5	3.7
4	5350.00	48.2 AV	54.0	-5.8	1.64 V	274	44.5	3.7
5	10640.00	49.1 PK	74.0	-24.9	1.79 V	249	35.6	13.5
6	10640.00	36.7 AV	54.0	-17.3	1.79 V	249	23.2	13.5
7	15960.00	49.5 PK	74.0	-24.5	1.94 V	231	36.0	13.5
8	15960.00	37.5 AV	54.0	-16.5	1.94 V	231	24.0	13.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

RF Mode	TX 802.11a	Channel	CH 100 : 5500 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.5 PK	74.0	-19.5	1.65 H	58	50.4	4.1
2	5460.00	43.3 AV	54.0	-10.7	1.65 H	58	39.2	4.1
3	#5470.00	59.7 PK	68.2	-8.5	1.65 H	58	55.5	4.2
4	*5500.00	111.8 PK			1.65 H	58	107.6	4.2
5	*5500.00	101.5 AV			1.65 H	58	97.3	4.2
6	11000.00	50.5 PK	74.0	-23.5	1.75 H	178	37.0	13.5
7	11000.00	38.0 AV	54.0	-16.0	1.75 H	178	24.5	13.5
8	#16500.00	52.4 PK	68.2	-15.8	1.59 H	156	37.3	15.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	56.8 PK	74.0	-17.2	1.63 V	276	52.7	4.1
2	5460.00	44.6 AV	54.0	-9.4	1.63 V	276	40.5	4.1
3	*5500.00	116.4 PK			1.63 V	276	112.2	4.2
4	*5500.00	106.7 AV			1.63 V	276	102.5	4.2
5	11000.00	50.0 PK	74.0	-24.0	1.76 V	275	36.5	13.5
6	11000.00	37.2 AV	54.0	-16.8	1.76 V	275	23.7	13.5
7	#16500.00	49.5 PK	68.2	-18.7	1.89 V	243	34.4	15.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11a	Channel	CH 116 : 5580 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	111.0 PK			1.55 H	60	106.7	4.3
2	*5580.00	101.8 AV			1.55 H	60	97.5	4.3
3	11160.00	50.4 PK	74.0	-23.6	1.67 H	181	36.8	13.6
4	11160.00	37.8 AV	54.0	-16.2	1.67 H	181	24.2	13.6
5	#16740.00	51.7 PK	68.2	-16.5	1.54 H	145	35.1	16.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	115.9 PK			1.66 V	274	111.6	4.3
2	*5580.00	106.8 AV			1.66 V	274	102.5	4.3
3	11160.00	49.9 PK	74.0	-24.1	1.68 V	268	36.3	13.6
4	11160.00	37.4 AV	54.0	-16.6	1.68 V	268	23.8	13.6
5	#16740.00	49.0 PK	68.2	-19.2	1.84 V	234	32.4	16.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11a	Channel	CH 140 : 5700 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	110.6 PK			1.55 H	67	106.3	4.3
2	*5700.00	101.3 AV			1.55 H	67	97.0	4.3
3	#5725.00	61.3 PK	68.2	-6.9	1.55 H	67	56.9	4.4
4	11400.00	51.1 PK	74.0	-22.9	1.70 H	168	37.5	13.6
5	11400.00	38.3 AV	54.0	-15.7	1.70 H	168	24.7	13.6
6	#17100.00	52.3 PK	68.2	-15.9	1.62 H	157	34.5	17.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	116.7 PK			1.72 V	294	112.4	4.3
2	*5700.00	106.8 AV			1.72 V	294	102.5	4.3
3	#5725.00	67.5 PK	68.2	-0.7	1.72 V	294	63.1	4.4
4	11400.00	49.3 PK	74.0	-24.7	1.75 V	260	35.7	13.6
5	11400.00	37.0 AV	54.0	-17.0	1.75 V	260	23.4	13.6
6	#17100.00	50.2 PK	68.2	-18.0	1.90 V	236	32.4	17.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11a	Channel	CH 144 : 5720 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.6 PK	74.0	-19.4	1.54 H	44	50.5	4.1
2	5460.00	41.9 AV	54.0	-12.1	1.54 H	44	37.8	4.1
3	#5470.00	56.1 PK	68.2	-12.1	1.54 H	44	51.9	4.2
4	*5720.00	110.6 PK			1.54 H	44	106.3	4.3
5	*5720.00	101.5 AV			1.54 H	44	97.2	4.3
6	#5850.00	50.3 PK	68.2	-17.9	1.54 H	44	45.4	4.9
7	11440.00	50.7 PK	74.0	-23.3	1.69 H	170	36.9	13.8
8	11440.00	38.2 AV	54.0	-15.8	1.69 H	170	24.4	13.8
9	#17160.00	52.5 PK	68.2	-15.7	1.64 H	158	34.4	18.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	56.8 PK	74.0	-17.2	1.68 V	264	52.7	4.1
2	5460.00	43.7 AV	54.0	-10.3	1.68 V	264	39.6	4.1
3	#5470.00	55.7 PK	68.2	-12.5	1.68 V	264	51.5	4.2
4	*5720.00	116.5 PK			1.68 V	264	112.2	4.3
5	*5720.00	107.2 AV			1.68 V	264	102.9	4.3
6	#5850.00	53.6 PK	68.2	-14.6	1.68 V	264	48.7	4.9
7	11440.00	49.2 PK	74.0	-24.8	1.73 V	259	35.4	13.8
8	11440.00	36.8 AV	54.0	-17.2	1.73 V	259	23.0	13.8
9	#17160.00	50.0 PK	68.2	-18.2	1.87 V	245	31.9	18.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE20)	Channel	CH 52 : 5260 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	52.5 PK	74.0	-21.5	1.58 H	49	48.3	4.2
2	5150.00	42.4 AV	54.0	-11.6	1.58 H	49	38.2	4.2
3	*5260.00	112.8 PK			1.58 H	49	109.0	3.8
4	*5260.00	101.3 AV			1.58 H	49	97.5	3.8
5	#10520.00	51.6 PK	68.2	-16.6	1.74 H	174	38.2	13.4
6	15780.00	52.9 PK	74.0	-21.1	1.63 H	145	38.7	14.2
7	15780.00	39.3 AV	54.0	-14.7	1.63 H	145	25.1	14.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	53.6 PK	74.0	-20.4	1.64 V	283	49.4	4.2
2	5150.00	44.7 AV	54.0	-9.3	1.64 V	283	40.5	4.2
3	*5260.00	118.4 PK			1.64 V	283	114.6	3.8
4	*5260.00	107.5 AV			1.64 V	283	103.7	3.8
5	#10520.00	47.4 PK	68.2	-20.8	1.94 V	223	34.0	13.4
6	15780.00	49.1 PK	74.0	-24.9	1.65 V	277	34.9	14.2
7	15780.00	37.4 AV	54.0	-16.6	1.65 V	277	23.2	14.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE20)	Channel	CH 60 : 5300 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	114.0 PK			1.57 H	50	110.3	3.7
2	*5300.00	101.7 AV			1.57 H	50	98.0	3.7
3	10600.00	51.3 PK	74.0	-22.7	1.74 H	159	37.9	13.4
4	10600.00	38.3 AV	54.0	-15.7	1.74 H	159	24.9	13.4
5	15900.00	52.2 PK	74.0	-21.8	1.63 H	143	38.7	13.5
6	15900.00	38.7 AV	54.0	-15.3	1.63 H	143	25.2	13.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	119.6 PK			1.55 V	281	115.9	3.7
2	*5300.00	107.6 AV			1.55 V	281	103.9	3.7
3	10600.00	47.1 PK	74.0	-26.9	1.92 V	236	33.7	13.4
4	10600.00	36.0 AV	54.0	-18.0	1.92 V	236	22.6	13.4
5	15900.00	49.2 PK	74.0	-24.8	1.69 V	292	35.7	13.5
6	15900.00	37.8 AV	54.0	-16.2	1.69 V	292	24.3	13.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

RF Mode	TX 802.11ax (HE20)	Channel	CH 64 : 5320 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	113.8 PK			1.62 H	45	110.0	3.8
2	*5320.00	101.5 AV			1.62 H	45	97.7	3.8
3	5350.00	54.6 PK	74.0	-19.4	1.62 H	45	50.9	3.7
4	5350.00	44.6 AV	54.0	-9.4	1.62 H	45	40.9	3.7
5	10640.00	51.5 PK	74.0	-22.5	1.66 H	154	38.0	13.5
6	10640.00	38.5 AV	54.0	-15.5	1.66 H	154	25.0	13.5
7	15960.00	51.7 PK	74.0	-22.3	1.61 H	163	38.2	13.5
8	15960.00	38.5 AV	54.0	-15.5	1.61 H	163	25.0	13.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	119.6 PK			1.61 V	276	115.8	3.8
2	*5320.00	107.8 AV			1.61 V	276	104.0	3.8
3	5350.59	64.8 PK	74.0	-9.2	1.61 V	276	61.1	3.7
4	5350.59	51.7 AV	54.0	-2.3	1.61 V	276	48.0	3.7
5	10640.00	47.1 PK	74.0	-26.9	1.93 V	237	33.6	13.5
6	10640.00	36.0 AV	54.0	-18.0	1.93 V	237	22.5	13.5
7	15960.00	49.9 PK	74.0	-24.1	1.64 V	305	36.4	13.5
8	15960.00	37.9 AV	54.0	-16.1	1.64 V	305	24.4	13.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

RF Mode	TX 802.11ax (HE20)	Channel	CH 100 : 5500 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	52.3 PK	74.0	-21.7	1.52 H	50	48.2	4.1
2	5460.00	42.0 AV	54.0	-12.0	1.52 H	50	37.9	4.1
3	#5470.00	57.8 PK	68.2	-10.4	1.52 H	50	53.6	4.2
4	*5500.00	112.5 PK			1.52 H	50	108.3	4.2
5	*5500.00	100.9 AV			1.52 H	50	96.7	4.2
6	11000.00	51.1 PK	74.0	-22.9	1.67 H	173	37.6	13.5
7	11000.00	38.6 AV	54.0	-15.4	1.67 H	173	25.1	13.5
8	#16500.00	52.8 PK	68.2	-15.4	1.70 H	139	37.7	15.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5457.91	57.2 PK	74.0	-16.8	1.67 V	277	53.1	4.1
2	5457.91	45.6 AV	54.0	-8.4	1.67 V	277	41.5	4.1
3	#5470.00	63.2 PK	68.2	-5.0	1.67 V	277	59.0	4.2
4	*5500.00	119.7 PK			1.67 V	277	115.5	4.2
5	*5500.00	107.2 AV			1.67 V	277	103.0	4.2
6	11000.00	47.8 PK	74.0	-26.2	1.95 V	227	34.3	13.5
7	11000.00	36.2 AV	54.0	-17.8	1.95 V	227	22.7	13.5
8	#16500.00	49.4 PK	68.2	-18.8	1.65 V	292	34.3	15.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE20)	Channel	CH 116 : 5580 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	113.7 PK			1.64 H	42	109.4	4.3
2	*5580.00	101.7 AV			1.64 H	42	97.4	4.3
3	11160.00	50.9 PK	74.0	-23.1	1.70 H	180	37.3	13.6
4	11160.00	38.1 AV	54.0	-15.9	1.70 H	180	24.5	13.6
5	#16740.00	51.7 PK	68.2	-16.5	1.67 H	148	35.1	16.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	120.0 PK			1.62 V	291	115.7	4.3
2	*5580.00	107.4 AV			1.62 V	291	103.1	4.3
3	11160.00	47.2 PK	74.0	-26.8	1.87 V	220	33.6	13.6
4	11160.00	35.9 AV	54.0	-18.1	1.87 V	220	22.3	13.6
5	#16740.00	49.2 PK	68.2	-19.0	1.68 V	286	32.6	16.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE20)	Channel	CH 140 : 5700 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	113.1 PK			1.69 H	41	108.8	4.3
2	*5700.00	100.6 AV			1.69 H	41	96.3	4.3
3	#5725.00	62.4 PK	68.2	-5.8	1.69 H	41	58.0	4.4
4	11400.00	51.2 PK	74.0	-22.8	1.67 H	171	37.6	13.6
5	11400.00	38.2 AV	54.0	-15.8	1.67 H	171	24.6	13.6
6	#17100.00	52.4 PK	68.2	-15.8	1.66 H	142	34.6	17.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	118.4 PK			1.72 V	286	114.1	4.3
2	*5700.00	106.1 AV			1.72 V	286	101.8	4.3
3	#5725.00	67.8 PK	68.2	-0.4	1.72 V	286	63.4	4.4
4	11400.00	47.1 PK	74.0	-26.9	1.89 V	244	33.5	13.6
5	11400.00	35.8 AV	54.0	-18.2	1.89 V	244	22.2	13.6
6	#17100.00	49.3 PK	68.2	-18.9	1.66 V	283	31.5	17.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE20)	Channel	CH 144 : 5720 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.9 PK	74.0	-19.1	1.65 H	50	50.8	4.1
2	5460.00	42.3 AV	54.0	-11.7	1.65 H	50	38.2	4.1
3	#5470.00	55.6 PK	68.2	-12.6	1.65 H	50	51.4	4.2
4	*5720.00	113.6 PK			1.65 H	50	109.3	4.3
5	*5720.00	101.8 AV			1.65 H	50	97.5	4.3
6	#5850.00	50.6 PK	68.2	-17.6	1.65 H	50	45.7	4.9
7	11440.00	51.0 PK	74.0	-23.0	1.64 H	158	37.2	13.8
8	11440.00	38.6 AV	54.0	-15.4	1.64 H	158	24.8	13.8
9	#17160.00	52.5 PK	68.2	-15.7	1.67 H	145	34.4	18.1

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	56.5 PK	74.0	-17.5	1.62 V	305	52.4	4.1
2	5460.00	43.6 AV	54.0	-10.4	1.62 V	305	39.5	4.1
3	#5470.00	56.0 PK	68.2	-12.2	1.62 V	305	51.8	4.2
4	*5720.00	120.1 PK			1.62 V	305	115.8	4.3
5	*5720.00	107.8 AV			1.62 V	305	103.5	4.3
6	#5850.00	53.9 PK	68.2	-14.3	1.62 V	305	49.0	4.9
7	11440.00	49.6 PK	74.0	-24.4	1.72 V	269	35.8	13.8
8	11440.00	37.1 AV	54.0	-16.9	1.72 V	269	23.3	13.8
9	#17160.00	50.3 PK	68.2	-17.9	1.89 V	247	32.2	18.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE40)	Channel	CH 54 : 5270 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	53.7 PK	74.0	-20.3	1.57 H	50	49.5	4.2
2	5150.00	42.7 AV	54.0	-11.3	1.57 H	50	38.5	4.2
3	*5270.00	111.2 PK			1.57 H	50	107.4	3.8
4	*5270.00	98.8 AV			1.57 H	50	95.0	3.8
5	#10540.00	51.2 PK	68.2	-17.0	1.67 H	158	37.8	13.4
6	15810.00	52.1 PK	74.0	-21.9	1.63 H	155	38.2	13.9
7	15810.00	38.7 AV	54.0	-15.3	1.63 H	155	24.8	13.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	53.7 PK	74.0	-20.3	1.68 V	281	49.5	4.2
2	5150.00	45.6 AV	54.0	-8.4	1.68 V	281	41.4	4.2
3	*5270.00	117.2 PK			1.68 V	281	113.4	3.8
4	*5270.00	105.1 AV			1.68 V	281	101.3	3.8
5	#10540.00	46.8 PK	68.2	-21.4	1.91 V	244	33.4	13.4
6	15810.00	49.5 PK	74.0	-24.5	1.61 V	290	35.6	13.9
7	15810.00	37.8 AV	54.0	-16.2	1.61 V	290	23.9	13.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE40)	Channel	CH 62 : 5310 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	106.2 PK			1.64 H	46	102.5	3.7
2	*5310.00	97.0 AV			1.64 H	46	93.3	3.7
3	5350.00	53.3 PK	74.0	-20.7	1.64 H	46	49.6	3.7
4	5350.00	46.7 AV	54.0	-7.3	1.64 H	46	43.0	3.7
5	10620.00	51.3 PK	74.0	-22.7	1.71 H	181	37.9	13.4
6	10620.00	38.4 AV	54.0	-15.6	1.71 H	181	25.0	13.4
7	15930.00	52.3 PK	74.0	-21.7	1.59 H	144	38.8	13.5
8	15930.00	38.7 AV	54.0	-15.3	1.59 H	144	25.2	13.5

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	114.3 PK			1.62 V	278	110.6	3.7
2	*5310.00	102.3 AV			1.62 V	278	98.6	3.7
3	5351.11	67.5 PK	74.0	-6.5	1.62 V	278	63.8	3.7
4	5351.11	53.7 AV	54.0	-0.3	1.62 V	278	50.0	3.7
5	10620.00	46.7 PK	74.0	-27.3	1.90 V	239	33.3	13.4
6	10620.00	35.5 AV	54.0	-18.5	1.90 V	239	22.1	13.4
7	15930.00	49.2 PK	74.0	-24.8	1.63 V	291	35.7	13.5
8	15930.00	37.8 AV	54.0	-16.2	1.63 V	291	24.3	13.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

RF Mode	TX 802.11ax (HE40)	Channel	CH 102 : 5510 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	53.3 PK	74.0	-20.7	1.56 H	51	49.2	4.1
2	5460.00	44.5 AV	54.0	-9.5	1.56 H	51	40.4	4.1
3	#5464.56	58.1 PK	68.2	-10.1	1.56 H	51	53.9	4.2
4	*5510.00	108.6 PK			1.56 H	51	104.4	4.2
5	*5510.00	97.4 AV			1.56 H	51	93.2	4.2
6	11020.00	51.0 PK	74.0	-23.0	1.69 H	159	37.5	13.5
7	11020.00	38.4 AV	54.0	-15.6	1.69 H	159	24.9	13.5
8	#16530.00	52.4 PK	68.2	-15.8	1.62 H	166	37.1	15.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5458.30	59.6 PK	74.0	-14.4	1.68 V	282	55.5	4.1
2	5458.30	46.4 AV	54.0	-7.6	1.68 V	282	42.3	4.1
3	#5470.00	67.1 PK	68.2	-1.1	1.68 V	282	62.9	4.2
4	*5510.00	114.6 PK			1.68 V	282	110.4	4.2
5	*5510.00	102.7 AV			1.68 V	282	98.5	4.2
6	11020.00	47.5 PK	74.0	-26.5	1.98 V	237	34.0	13.5
7	11020.00	36.1 AV	54.0	-17.9	1.98 V	237	22.6	13.5
8	#16530.00	49.0 PK	68.2	-19.2	1.63 V	298	33.7	15.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE40)	Channel	CH 110 : 5550 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5550.00	111.7 PK			1.53 H	47	107.5	4.2
2	*5550.00	99.1 AV			1.53 H	47	94.9	4.2
3	11100.00	51.3 PK	74.0	-22.7	1.75 H	181	37.9	13.4
4	11100.00	38.6 AV	54.0	-15.4	1.75 H	181	25.2	13.4
5	#16650.00	52.4 PK	68.2	-15.8	1.58 H	142	36.2	16.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5550.00	116.3 PK			1.71 V	282	112.1	4.2
2	*5550.00	104.4 AV			1.71 V	282	100.2	4.2
3	11100.00	47.3 PK	74.0	-26.7	1.88 V	243	33.9	13.4
4	11100.00	35.9 AV	54.0	-18.1	1.88 V	243	22.5	13.4
5	#16650.00	49.3 PK	68.2	-18.9	1.67 V	288	33.1	16.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE40)	Channel	CH 134 : 5670 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	111.3 PK			1.63 H	62	106.9	4.4
2	*5670.00	98.9 AV			1.63 H	62	94.5	4.4
3	#5725.00	61.5 PK	68.2	-6.7	1.63 H	62	57.1	4.4
4	11340.00	50.8 PK	74.0	-23.2	1.66 H	176	36.9	13.9
5	11340.00	38.1 AV	54.0	-15.9	1.66 H	176	24.2	13.9
6	#17010.00	52.0 PK	68.2	-16.2	1.63 H	166	34.5	17.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	116.5 PK			1.75 V	284	112.1	4.4
2	*5670.00	104.7 AV			1.75 V	284	100.3	4.4
3	#5725.00	67.1 PK	68.2	-1.1	1.75 V	284	62.7	4.4
4	11340.00	47.0 PK	74.0	-27.0	1.87 V	251	33.1	13.9
5	11340.00	35.5 AV	54.0	-18.5	1.87 V	251	21.6	13.9
6	#17010.00	49.5 PK	68.2	-18.7	1.68 V	298	32.0	17.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE40)	Channel	CH 142 : 5710 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	55.1 PK	74.0	-18.9	1.55 H	44	51.0	4.1
2	5460.00	42.4 AV	54.0	-11.6	1.55 H	44	38.3	4.1
3	#5470.00	56.0 PK	68.2	-12.2	1.55 H	44	51.8	4.2
4	*5710.00	111.5 PK			1.55 H	44	107.2	4.3
5	*5710.00	99.1 AV			1.55 H	44	94.8	4.3
6	#5850.00	50.7 PK	68.2	-17.5	1.55 H	44	45.8	4.9
7	11420.00	50.7 PK	74.0	-23.3	1.73 H	178	37.0	13.7
8	11420.00	38.2 AV	54.0	-15.8	1.73 H	178	24.5	13.7
9	#17130.00	52.4 PK	68.2	-15.8	1.67 H	148	34.5	17.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	56.6 PK	74.0	-17.4	1.66 V	267	52.5	4.1
2	5460.00	43.3 AV	54.0	-10.7	1.66 V	267	39.2	4.1
3	#5470.00	56.1 PK	68.2	-12.1	1.66 V	267	51.9	4.2
4	*5710.00	116.5 PK			1.66 V	267	112.2	4.3
5	*5710.00	104.8 AV			1.66 V	267	100.5	4.3
6	#5850.00	53.6 PK	68.2	-14.6	1.66 V	267	48.7	4.9
7	11420.00	49.5 PK	74.0	-24.5	1.75 V	248	35.8	13.7
8	11420.00	37.2 AV	54.0	-16.8	1.75 V	248	23.5	13.7
9	#17130.00	49.6 PK	68.2	-18.6	1.85 V	236	31.7	17.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE80)	Channel	CH 58 : 5290 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	53.4 PK	74.0	-20.6	1.59 H	49	49.2	4.2
2	5150.00	43.7 AV	54.0	-10.3	1.59 H	49	39.5	4.2
3	*5290.00	104.3 PK			1.59 H	49	100.6	3.7
4	*5290.00	93.5 AV			1.59 H	49	89.8	3.7
5	5350.00	55.8 PK	74.0	-18.2	1.59 H	49	52.1	3.7
6	5350.00	45.7 AV	54.0	-8.3	1.59 H	49	42.0	3.7
7	#10580.00	50.8 PK	68.2	-17.4	1.70 H	166	37.4	13.4
8	15870.00	52.4 PK	74.0	-21.6	1.65 H	151	38.7	13.7
9	15870.00	38.9 AV	54.0	-15.1	1.65 H	151	25.2	13.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	53.7 PK	74.0	-20.3	1.63 V	281	49.5	4.2
2	5150.00	42.2 AV	54.0	-11.8	1.63 V	281	38.0	4.2
3	*5290.00	110.2 PK			1.63 V	281	106.5	3.7
4	*5290.00	98.4 AV			1.63 V	281	94.7	3.7
5	5350.98	65.2 PK	74.0	-8.8	1.63 V	281	61.5	3.7
6	5350.98	53.5 AV	54.0	-0.5	1.63 V	281	49.8	3.7
7	#10580.00	46.5 PK	68.2	-21.7	1.98 V	241	33.1	13.4
8	15870.00	49.5 PK	74.0	-24.5	1.62 V	282	35.8	13.7
9	15870.00	37.5 AV	54.0	-16.5	1.62 V	282	23.8	13.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE80)	Channel	CH 106 : 5530 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5459.55	53.7 PK	74.0	-20.3	1.50 H	51	49.6	4.1
2	5459.55	46.0 AV	54.0	-8.0	1.50 H	51	41.9	4.1
3	#5464.79	56.1 PK	68.2	-12.1	1.50 H	51	51.9	4.2
4	*5530.00	103.7 PK			1.50 H	51	99.5	4.2
5	*5530.00	94.5 AV			1.50 H	51	90.3	4.2
6	#5770.52	51.9 PK	68.2	-16.3	1.50 H	51	47.4	4.5
7	11060.00	51.5 PK	74.0	-22.5	1.64 H	181	38.1	13.4
8	11060.00	38.6 AV	54.0	-15.4	1.64 H	181	25.2	13.4
9	#16590.00	51.7 PK	68.2	-16.5	1.61 H	171	36.0	15.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5455.68	62.6 PK	74.0	-11.4	1.71 V	283	58.5	4.1
2	5455.68	51.1 AV	54.0	-2.9	1.71 V	283	47.0	4.1
3	#5470.00	67.4 PK	68.2	-0.8	1.71 V	283	63.2	4.2
4	*5530.00	111.8 PK			1.71 V	283	107.6	4.2
5	*5530.00	99.5 AV			1.71 V	283	95.3	4.2
6	#5725.00	53.7 PK	68.2	-14.5	1.71 V	283	49.3	4.4
7	11060.00	47.5 PK	74.0	-26.5	1.98 V	223	34.1	13.4
8	11060.00	36.0 AV	54.0	-18.0	1.98 V	223	22.6	13.4
9	#16590.00	49.4 PK	68.2	-18.8	1.62 V	303	33.7	15.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE80)	Channel	CH 122 : 5610 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5610.00	105.8 PK			1.55 H	46	101.6	4.2
2	*5610.00	96.3 AV			1.55 H	46	92.1	4.2
3	#5725.00	53.5 PK	68.2	-14.7	1.55 H	46	49.1	4.4
4	11220.00	50.9 PK	74.0	-23.1	1.73 H	158	37.1	13.8
5	11220.00	38.3 AV	54.0	-15.7	1.73 H	158	24.5	13.8
6	#16830.00	51.8 PK	68.2	-16.4	1.57 H	146	35.1	16.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5610.00	112.9 PK			1.66 V	283	108.7	4.2
2	*5610.00	101.3 AV			1.66 V	283	97.1	4.2
3	#5725.00	61.0 PK	68.2	-7.2	1.66 V	283	56.6	4.4
4	11220.00	46.8 PK	74.0	-27.2	1.89 V	234	33.0	13.8
5	11220.00	35.8 AV	54.0	-18.2	1.89 V	234	22.0	13.8
6	#16830.00	49.4 PK	68.2	-18.8	1.62 V	302	32.7	16.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE80)	Channel	CH 138 : 5690 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.8 PK	74.0	-19.2	1.53 H	48	50.7	4.1
2	5460.00	42.1 AV	54.0	-11.9	1.53 H	48	38.0	4.1
3	#5470.00	56.8 PK	68.2	-11.4	1.53 H	48	52.6	4.2
4	*5690.00	105.9 PK			1.53 H	48	101.5	4.4
5	*5690.00	96.2 AV			1.53 H	48	91.8	4.4
6	#5850.00	50.3 PK	68.2	-17.9	1.53 H	48	45.4	4.9
7	11380.00	50.4 PK	74.0	-23.6	1.68 H	181	36.8	13.6
8	11380.00	38.1 AV	54.0	-15.9	1.68 H	181	24.5	13.6
9	#17070.00	52.3 PK	68.2	-15.9	1.66 H	156	34.7	17.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	56.6 PK	74.0	-17.4	1.65 V	282	52.5	4.1
2	5460.00	43.3 AV	54.0	-10.7	1.65 V	282	39.2	4.1
3	#5470.00	55.7 PK	68.2	-12.5	1.65 V	282	51.5	4.2
4	*5690.00	113.2 PK			1.65 V	282	108.8	4.4
5	*5690.00	101.4 AV			1.65 V	282	97.0	4.4
6	#5850.00	53.4 PK	68.2	-14.8	1.65 V	282	48.5	4.9
7	11380.00	49.2 PK	74.0	-24.8	1.68 V	248	35.6	13.6
8	11380.00	37.1 AV	54.0	-16.9	1.68 V	248	23.5	13.6
9	#17070.00	50.0 PK	68.2	-18.2	1.85 V	256	32.4	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE160)	Channel	CH 50 : 5250 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5117.35	58.0 PK	74.0	-16.0	1.64 H	54	53.7	4.3
2	5117.35	51.2 AV	54.0	-2.8	1.64 H	54	46.9	4.3
3	5146.75	62.0 PK	74.0	-12.0	1.64 H	54	57.8	4.2
4	5146.75	49.2 AV	54.0	-4.8	1.64 H	54	45.0	4.2
5	*5250.00	102.6 PK			1.64 H	54	98.8	3.8
6	*5250.00	91.8 AV			1.64 H	54	88.0	3.8
7	5369.02	53.5 PK	74.0	-20.5	1.64 H	54	49.7	3.8
8	5369.02	50.7 AV	54.0	-3.3	1.64 H	54	46.9	3.8
9	5380.75	64.1 PK	74.0	-9.9	1.64 H	54	60.3	3.8
10	5380.75	48.0 AV	54.0	-6.0	1.64 H	54	44.2	3.8
11	#10500.00	51.8 PK	68.2	-16.4	1.68 H	170	38.4	13.4
12	15750.00	52.6 PK	74.0	-21.4	1.66 H	150	38.3	14.3
13	15750.00	39.3 AV	54.0	-14.7	1.66 H	150	25.0	14.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5146.00	65.4 PK	74.0	-8.6	1.66 V	278	61.2	4.2
2	5146.00	53.7 AV	54.0	-0.3	1.66 V	278	49.5	4.2
3	*5250.00	108.7 PK			1.66 V	278	104.9	3.8
4	*5250.00	96.3 AV			1.66 V	278	92.5	3.8
5	5350.85	66.7 PK	74.0	-7.3	1.66 V	278	63.0	3.7
6	5350.85	53.6 AV	54.0	-0.4	1.66 V	278	49.9	3.7
7	#10500.00	47.1 PK	68.2	-21.1	1.98 V	226	33.7	13.4
8	15750.00	49.4 PK	74.0	-24.6	1.69 V	287	35.1	14.3
9	15750.00	37.5 AV	54.0	-16.5	1.69 V	287	23.2	14.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE160)	Channel	CH 114 : 5570 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5400.04	63.1 PK	74.0	-10.9	1.50 H	51	59.2	3.9
2	5400.04	50.2 AV	54.0	-3.8	1.50 H	51	46.3	3.9
3	5429.85	59.1 PK	74.0	-14.9	1.50 H	51	55.1	4.0
4	5429.85	51.5 AV	54.0	-2.5	1.50 H	51	47.5	4.0
5	#5464.98	59.0 PK	68.2	-9.2	1.50 H	51	54.8	4.2
6	*5570.00	101.9 PK			1.50 H	51	97.7	4.2
7	*5570.00	91.6 AV			1.50 H	51	87.4	4.2
8	#5725.46	59.5 PK	68.2	-8.7	1.50 H	51	55.1	4.4
9	11140.00	51.1 PK	74.0	-22.9	1.70 H	178	37.5	13.6
10	11140.00	38.2 AV	54.0	-15.8	1.70 H	178	24.6	13.6
11	#16710.00	52.1 PK	68.2	-16.1	1.61 H	153	35.5	16.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5420.26	66.8 PK	74.0	-7.2	1.69 V	284	62.8	4.0
2	5420.26	53.5 AV	54.0	-0.5	1.69 V	284	49.5	4.0
3	#5460.57	67.1 PK	68.2	-1.1	1.69 V	284	63.0	4.1
4	*5570.00	107.6 PK			1.69 V	284	103.4	4.2
5	*5570.00	96.6 AV			1.69 V	284	92.4	4.2
6	#5725.00	67.0 PK	68.2	-1.2	1.69 V	284	62.6	4.4
7	11140.00	47.0 PK	74.0	-27.0	1.98 V	242	33.4	13.6
8	11140.00	35.9 AV	54.0	-18.1	1.98 V	242	22.3	13.6
9	#16710.00	49.1 PK	68.2	-19.1	1.68 V	275	32.5	16.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

Below 1GHz Data:

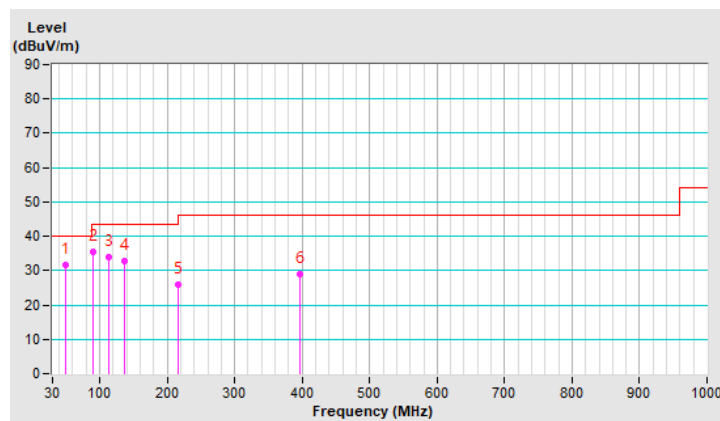
802.11ax (HE80)

RF Mode	TX 802.11ax (HE80)	Channel	CH 106 : 5530 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	48.57	31.5 QP	40.0	-8.5	2.00 H	10	39.1	-7.6
2	90.43	35.4 QP	43.5	-8.1	2.00 H	127	48.6	-13.2
3	112.97	33.8 QP	43.5	-9.7	1.50 H	255	43.6	-9.8
4	136.18	32.8 QP	43.5	-10.7	1.50 H	121	40.4	-7.6
5	215.67	26.0 QP	43.5	-17.5	2.00 H	105	36.0	-10.0
6	395.87	29.1 QP	46.0	-16.9	3.00 H	244	32.2	-3.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

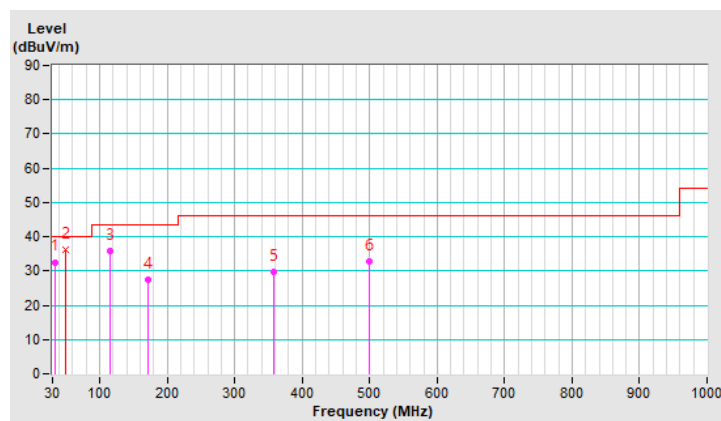


RF Mode	TX 802.11ax (HE80)	Channel	CH 106 : 5530 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.78	32.6 QP	40.0	-7.4	1.00 V	255	41.3	-8.7
2	49.94	36.2 QP	40.0	-3.8	1.00 V	5	43.7	-7.5
3	116.01	35.8 QP	43.5	-7.7	1.00 V	277	45.3	-9.5
4	171.23	27.4 QP	43.5	-16.1	1.50 V	233	34.8	-7.4
5	357.54	29.7 QP	46.0	-16.3	1.50 V	305	33.8	-4.1
6	500.12	32.9 QP	46.0	-13.1	1.00 V	110	33.3	-0.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	100287	Apr. 16, 2020	Apr. 15, 2021
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV 216	100072	June 13, 2020	June 12, 2021
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK-8127	8127-522	Sep. 08, 2020	Sep. 07, 2021
RF Cable	5D-FB	COACAB-001	Mar. 13, 2020	Mar. 12, 2021
10 dB PAD EMEC	STI02-2200-10	006	Aug. 28, 2020	Aug. 27, 2021
50 ohms Terminator	N/A	EMC-02	Sep. 16, 2020	Sep. 15, 2021
50 ohms Terminator	N/A	EMC-03	Sep. 30, 2020	Sep. 29, 2021
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conducted Room C
3. The VCCI Con C Registration No. is C-13611.
4. Tested Date: Oct. 19, 2020

4.2.3 Test Procedure

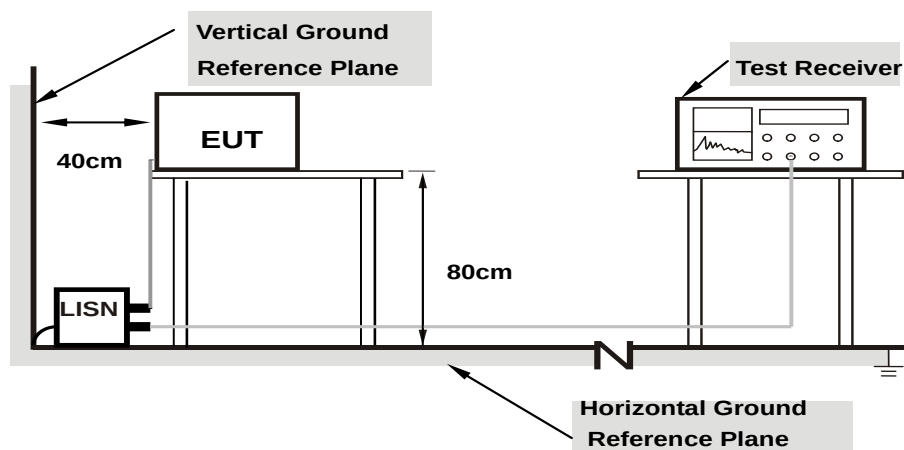
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

Note: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT Operating Condition

Same as 4.1.6.

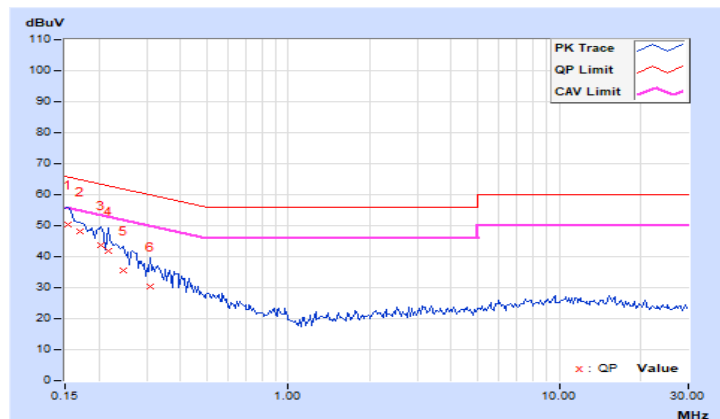
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.94	40.56	23.42	50.50	33.36	65.79	55.79	-15.29	-22.43
2	0.16953	9.94	38.21	19.90	48.15	29.84	64.98	54.98	-16.83	-25.14
3	0.20469	9.95	33.74	17.73	43.69	27.68	63.42	53.42	-19.73	-25.74
4	0.21641	9.95	31.92	13.83	41.87	23.78	62.96	52.96	-21.09	-29.18
5	0.24766	9.95	25.56	10.13	35.51	20.08	61.84	51.84	-26.33	-31.76
6	0.31016	9.96	20.25	5.54	30.21	15.50	59.97	49.97	-29.76	-34.47

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

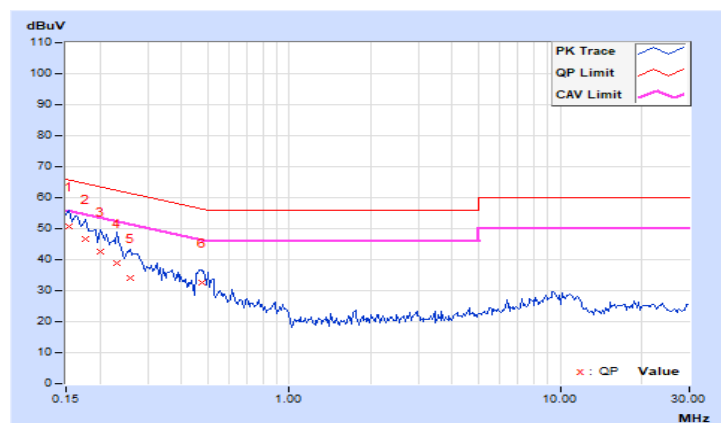


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.95	40.62	23.13	50.57	33.08	65.79	55.79	-15.22	-22.71
2	0.17734	9.96	36.80	19.97	46.76	29.93	64.61	54.61	-17.85	-24.68
3	0.20078	9.96	32.68	16.47	42.64	26.43	63.58	53.58	-20.94	-27.15
4	0.23203	9.96	28.95	11.83	38.91	21.79	62.38	52.38	-23.47	-30.59
5	0.25938	9.97	24.04	9.10	34.01	19.07	61.45	51.45	-27.44	-32.38
6	0.47422	9.98	22.77	15.68	32.75	25.66	56.44	46.44	-23.69	-20.78

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
	√	Indoor Access Point	1 Watt (30 dBm)
		Client device	250mW (24 dBm)
U-NII-2A	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

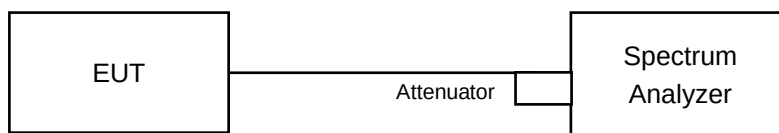
Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

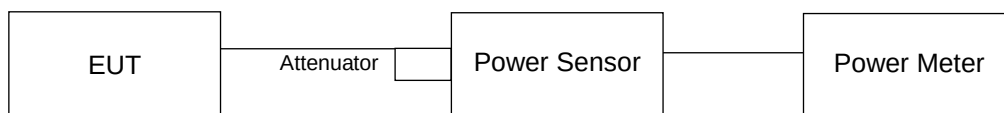
4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT

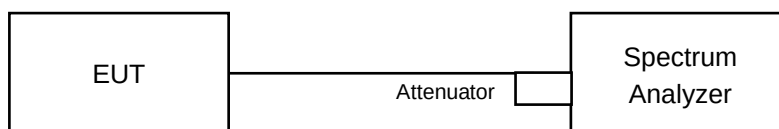
For channel straddling 5250MHz and 5725MHz:



For other channels:



FOR 26dB OCCUPIED BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR POWER OUTPUT MEASUREMENT

For channel straddling 5250MHz and 5725MHz:

Follow FCC KDB 789033 UNII test procedure:

Method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1MHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Number of points in sweep $\geq 2 \text{ Span} / \text{RBW}$.
5. Sweep time = auto.
6. Set trigger to free run (duty cycle ≥ 98 percent)
7. Detector = RMS.
8. Trace average at least 100 traces in power averaging mode
9. Compute power by integrating the spectrum across the 26 dB EBW of the signal.

For other channels:

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

FOR 26dB OCCUPIED BANDWIDTH

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW $>$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Results

CDD Mode

POWER OUTPUT

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	16.66	17.02	16.43	16.85	189.066	22.77	24	Pass
60	5300	16.81	16.85	16.40	16.81	188.016	22.74	24	Pass
64	5320	16.59	17.09	16.21	17.05	189.254	22.77	24	Pass
100	5500	16.72	16.76	16.34	16.51	182.238	22.61	24	Pass
116	5580	16.46	16.78	16.55	16.58	182.586	22.61	24	Pass
140	5700	16.34	16.51	16.79	16.66	181.922	22.60	24	Pass
*144 (U-NII-2C Band)	5720	14.21	12.69	13.48	15.64	103.869	20.16	23	Pass
*144 (U-NII-3 Band)	5720	7.77	7.87	7.44	9.35	26.264	14.19	30	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.6	24.34 > 24
60	5300	21.68	24.36 > 24
64	5320	21.66	24.35 > 24
100	5500	21.65	24.35 > 24
116	5580	21.69	24.36 > 24
140	5700	21.62	24.34 > 24
144 (U-NII-2C Band)	5720	15.87	23 < 24

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	16.55	16.67	16.69	16.84	186.609	22.71	24	Pass
60	5300	16.32	16.87	16.84	16.55	184.987	22.67	24	Pass
64	5320	16.53	16.94	16.19	16.88	184.753	22.67	24	Pass
100	5500	16.67	16.99	16.58	16.72	188.943	22.76	24	Pass
116	5580	16.74	16.70	16.54	16.68	185.62	22.69	24	Pass
140	5700	16.53	16.75	16.51	16.84	185.37	22.68	24	Pass
*144 (U-NII-2C Band)	5720	14.01	12.90	13.37	15.73	103.813	20.16	22.98	Pass
*144 (U-NII-3 Band)	5720	8.60	7.66	8.09	10.35	30.36	14.82	30	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.64	24.35 > 24
60	5300	21.47	24.31 > 24
64	5320	21.62	24.34 > 24
100	5500	21.56	24.33 > 24
116	5580	21.72	24.36 > 24
140	5700	21.62	24.34 > 24
144 (U-NII-2C Band)	5720	15.81	22.98 < 24

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	18.11	18.25	17.89	17.11	244.471	23.88	24	Pass
62	5310	18.21	18.07	17.64	17.28	241.875	23.84	24	Pass
102	5510	18.26	17.98	17.58	17.11	238.478	23.77	24	Pass
110	5550	18.23	18.09	17.61	16.95	238.166	23.77	24	Pass
134	5670	18.16	18.15	17.87	16.84	240.318	23.81	24	Pass
*142 (U-NII-2C Band)	5710	16.67	15.45	15.55	18.09	181.836	22.60	24	Pass
*142 (U-NII-3 Band)	5710	6.58	5.73	5.88	8.31	18.94	12.77	30	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	41.29	27.15 > 24
62	5310	41.18	27.14 > 24
102	5510	41.26	27.15 > 24
110	5550	41.27	27.15 > 24
134	5670	41.25	27.15 > 24
142 (U-NII-2C Band)	5710	35.71	26.52 > 24

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	16.57	16.50	16.33	16.69	179.682	22.55	24	Pass
106	5530	17.84	17.79	17.72	17.96	242.604	23.85	24	Pass
122	5610	17.86	17.75	17.58	17.95	240.314	23.81	24	Pass
*138 (U-NII-2C Band)	5690	16.01	14.87	15.28	17.53	160.945	22.07	24	Pass
*138 (U-NII-3 Band)	5690	2.34	1.23	1.84	3.59	6.855	8.36	30	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.33	30.15 > 24
106	5530	82.12	30.14 > 24
122	5610	82.61	30.17 > 24
138 (U-NII-2C Band)	5690	76.18	29.81 > 24

802.11ac (VHT160)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
*50 (U-NII-1 Band)	5250	12.49	11.88	12.41	13.99	75.638	18.79	30	Pass
*50 (U-NII-2A Band)	5250	12.38	12.19	12.17	14.02	75.572	18.78	24	Pass
114	5570	17.68	17.88	17.29	17.64	231.646	23.65	24	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
*50 (U-NII-2A Band)	5530	83.55	30.21 > 24
114	5690	167.37	33.23 > 24

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	16.98	17.15	17.23	17.51	210.977	23.24	24	Pass
60	5300	17.31	17.48	16.71	17.26	209.895	23.22	24	Pass
64	5320	17.25	17.58	16.72	17.38	212.059	23.26	24	Pass
100	5500	17.13	17.24	17.00	17.15	206.607	23.15	24	Pass
116	5580	17.18	17.19	17.04	17.15	207.062	23.16	24	Pass
140	5700	17.08	17.28	17.01	17.21	207.343	23.17	24	Pass
*144 (U-NII-2C Band)	5720	14.53	13.35	13.69	15.86	111.943	20.49	22.98	Pass
*144 (U-NII-3 Band)	5720	9.22	8.13	8.40	10.51	33.022	15.19	30	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.64	24.35 > 24
60	5300	21.47	24.31 > 24
64	5320	21.62	24.34 > 24
100	5500	21.56	24.33 > 24
116	5580	21.72	24.36 > 24
140	5700	21.62	24.34 > 24
144 (U-NII-2C Band)	5720	15.81	22.98 < 24

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	18.11	18.36	17.98	17.24	249.035	23.96	24.00	Pass
62	5310	18.28	18.20	17.78	17.36	247.796	23.94	24.00	Pass
102	5510	18.41	18.15	17.71	17.26	246.887	23.92	24.00	Pass
110	5550	18.35	18.21	17.72	17.04	244.351	23.88	24.00	Pass
134	5670	18.31	18.23	17.94	16.96	246.181	23.91	24.00	Pass
*142 (U-NII-2C Band)	5710	16.99	15.98	16.07	18.21	196.31	22.93	24.00	Pass
*142 (U-NII-3 Band)	5710	7.03	6.11	6.18	8.29	20.025	13.02	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	41.29	27.15 > 24
62	5310	41.18	27.14 > 24
102	5510	41.26	27.15 > 24
110	5550	41.27	27.15 > 24
134	5670	41.25	27.15 > 24
142 (U-NII-2C Band)	5710	35.71	26.52 > 24

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	16.69	16.63	16.45	16.81	184.822	22.67	24	Pass
106	5530	17.93	17.90	17.82	18.11	248.995	23.96	24	Pass
122	5610	18.06	17.88	17.71	18.02	247.757	23.94	24	Pass
*138 (U-NII-2C Band)	5690	16.39	15.30	15.58	17.63	171.519	22.34	24	Pass
*138 (U-NII-3 Band)	5690	2.76	1.72	1.99	4.11	7.531	8.77	30	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.33	30.15 > 24
106	5530	82.12	30.14 > 24
122	5610	82.61	30.17 > 24
138 (U-NII-2C Band)	5690	76.18	29.81 > 24

802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
*50 (U-NII-1 Band)	5250	12.72	11.94	12.61	14.41	80.183	19.04	30	Pass
*50 (U-NII-2A Band)	5250	12.52	12.18	12.45	14.28	78.755	18.96	24	Pass
114	5570	17.86	17.93	17.45	17.81	239.166	23.79	24	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
*50 (U-NII-2A Band)	5530	83.55	30.21 > 24
114	5690	167.37	33.23 > 24

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	16.55	16.67	16.69	16.84	186.609	22.71	23.02	Pass
60	5300	16.32	16.87	16.84	16.55	184.987	22.67	23.02	Pass
64	5320	16.53	16.94	16.19	16.88	184.753	22.67	23.02	Pass
100	5500	16.69	16.99	16.58	16.72	189.158	22.77	22.91	Pass
116	5580	16.75	16.70	16.54	16.68	185.729	22.69	22.91	Pass
140	5700	16.53	16.75	16.51	16.84	185.37	22.68	22.91	Pass
*144 (U-NII-2C Band)	5720	13.27	12.43	12.79	14.88	88.503	19.47	21.89	Pass
*144 (U-NII-3 Band)	5720	8.07	7.18	7.56	9.59	26.437	14.22	29.01	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-2A: The directional gain = 6.98dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (6.98-6)".
2. For U-NII-2C: The directional gain = 7.09dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (7.09-6)".
3. For U-NII-3: The directional gain = 6.99 dBi > 6 dBi, so the power limit shall be reduced to 30-(6.99-6) = 29.01dBm.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.64	24.35 > 24
60	5300	21.47	24.31 > 24
64	5320	21.62	24.34 > 24
100	5500	21.56	24.33 > 24
116	5580	21.72	24.36 > 24
140	5700	21.62	24.34 > 24
144 (U-NII-2C Band)	5720	15.81	22.98 < 24

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	16.88	17.18	16.85	16.09	190.054	22.79	23.02	Pass
62	5310	16.94	16.95	16.84	16.26	189.549	22.78	23.02	Pass
102	5510	17.15	16.92	16.54	15.99	185.885	22.69	22.91	Pass
110	5550	17.02	16.94	16.80	15.86	186.192	22.70	22.91	Pass
134	5670	16.95	16.98	16.84	15.84	186.11	22.70	22.91	Pass
*142 (U-NII-2C Band)	5710	15.19	14.55	14.61	16.73	137.552	21.38	22.91	Pass
*142 (U-NII-3 Band)	5710	5.28	4.65	4.71	6.70	13.926	11.44	29.01	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-2A: The directional gain = 6.98dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (6.98-6)".
2. For U-NII-2C: The directional gain = 7.09dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (7.09-6)".
3. For U-NII-3: The directional gain = 6.99 dBi > 6 dBi, so the power limit shall be reduced to 30- (6.99-6) = 29.01dBm.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	41.29	27.15 > 24
62	5310	41.18	27.14 > 24
102	5510	41.26	27.15 > 24
110	5550	41.27	27.15 > 24
134	5670	41.25	27.15 > 24
142 (U-NII-2C Band)	5710	35.71	26.52 > 24

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	16.57	16.50	16.33	16.69	179.682	22.55	23.02	Pass
106	5530	16.63	16.72	16.58	16.84	186.82	22.71	22.91	Pass
122	5610	16.88	16.91	16.58	16.84	191.648	22.83	22.91	Pass
*138 (U-NII-2C Band)	5690	14.79	13.86	14.06	16.15	121.13	20.83	22.91	Pass
*138 (U-NII-3 Band)	5690	1.00	0.07	0.52	2.26	5.085	7.06	29.01	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-2A: The directional gain = 6.98dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (6.98-6)".
2. For U-NII-2C: The directional gain = 7.09dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (7.09-6)".
3. For U-NII-3: The directional gain = 6.99 dBi > 6 dBi, so the power limit shall be reduced to 30-(6.99-6) = 29.01dBm.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.33	30.15 > 24
106	5530	82.12	30.14 > 24
122	5610	82.61	30.17 > 24
138 (U-NII-2C Band)	5690	76.18	29.81 > 24

802.11ac (VHT160)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
*50 (U-NII-1 Band)	5250	11.34	10.67	11.31	12.79	57.814	17.62	28.77	Pass
*50 (U-NII-2A Band)	5250	11.25	11.01	11.05	12.68	57.224	17.58	23.02	Pass
114	5570	16.78	16.97	16.36	16.75	187.983	22.74	22.91	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-2A: The directional gain = 6.98dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (6.98-6)".
2. For U-NII-2C: The directional gain = 7.09dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (7.09-6)".

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
*50 (U-NII-2A Band)	5530	83.55	30.21 > 24
114	5690	167.37	33.23 > 24

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	16.41	16.68	16.71	17.03	187.658	22.73	23.02	Pass
60	5300	16.84	17.03	16.09	16.72	186.406	22.70	23.02	Pass
64	5320	16.69	17.05	16.18	16.83	187.055	22.72	23.02	Pass
100	5500	16.95	16.99	16.58	16.92	194.251	22.88	22.91	Pass
116	5580	16.95	16.84	16.71	16.80	192.595	22.85	22.91	Pass
140	5700	16.72	16.94	16.79	16.96	193.833	22.87	22.91	Pass
*144 (U-NII-2C Band)	5720	13.80	12.50	12.94	15.20	94.563	19.76	21.89	Pass
*144 (U-NII-3 Band)	5720	8.37	7.20	7.67	10.02	28.013	14.47	29.01	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-2A: The directional gain = 6.98dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (6.98-6)".
2. For U-NII-2C: The directional gain = 7.09dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (7.09-6)".
3. For U-NII-3: The directional gain = 6.99 dBi > 6 dBi, so the power limit shall be reduced to 30-(6.99-6) = 29.01dBm.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.64	24.35 > 24
60	5300	21.47	24.31 > 24
64	5320	21.62	24.34 > 24
100	5500	21.56	24.33 > 24
116	5580	21.72	24.36 > 24
140	5700	21.62	24.34 > 24
144 (U-NII-2C Band)	5720	15.81	22.98 < 24

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	17.08	17.35	17.03	16.28	198.304	22.97	23.02	Pass
62	5310	17.02	17.16	16.78	16.45	194.15	22.88	23.02	Pass
102	5510	17.32	17.06	16.69	16.15	192.643	22.85	22.91	Pass
110	5550	17.25	17.06	16.62	16.05	190.096	22.79	22.91	Pass
134	5670	17.18	17.11	16.98	16.05	193.804	22.87	22.91	Pass
*142 (U-NII-2C Band)	5710	15.82	14.75	14.79	16.99	148.182	21.71	22.91	Pass
*142 (U-NII-3 Band)	5710	5.88	4.95	5.14	6.98	15.253	11.83	29.01	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-2A: The directional gain = 6.98dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (6.98-6)".
2. For U-NII-2C: The directional gain = 7.09dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (7.09-6)".
3. For U-NII-3: The directional gain = 6.99 dBi > 6 dBi, so the power limit shall be reduced to 30- (6.99-6) = 29.01dBm.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	41.29	27.15 > 24
62	5310	41.18	27.14 > 24
102	5510	41.26	27.15 > 24
110	5550	41.27	27.15 > 24
134	5670	41.25	27.15 > 24
142 (U-NII-2C Band)	5710	35.71	26.52 > 24

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	16.69	16.63	16.45	16.81	184.822	22.67	23.02	Pass
106	5530	16.75	16.85	16.67	16.97	191.958	22.83	22.91	Pass
122	5610	16.91	16.99	16.57	16.88	193.241	22.86	22.91	Pass
*138 (U-NII-2C Band)	5690	15.12	14.00	14.36	16.49	129.483	21.12	22.91	Pass
*138 (U-NII-3 Band)	5690	1.38	0.43	0.61	2.69	5.487	7.39	29.01	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-2A: The directional gain = 6.98dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (6.98-6)".
2. For U-NII-2C: The directional gain = 7.09dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (7.09-6)".
3. For U-NII-3: The directional gain = 6.99 dBi > 6 dBi, so the power limit shall be reduced to 30-(6.99-6) = 29.01dBm.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.33	30.15 > 24
106	5530	82.12	30.14 > 24
122	5610	82.61	30.17 > 24
138 (U-NII-2C Band)	5690	76.18	29.81 > 24

802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
*50 (U-NII-1 Band)	5250	11.69	10.98	11.57	13.25	62.778	17.98	28.77	Pass
*50 (U-NII-2A Band)	5250	11.46	11.25	11.49	12.98	61.285	17.87	23.02	Pass
114	5570	16.92	17.01	16.52	16.88	193.066	22.86	22.91	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-2A: The directional gain = 6.98dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (6.98-6)".
2. For U-NII-2C: The directional gain = 7.09dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (7.09-6)".

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

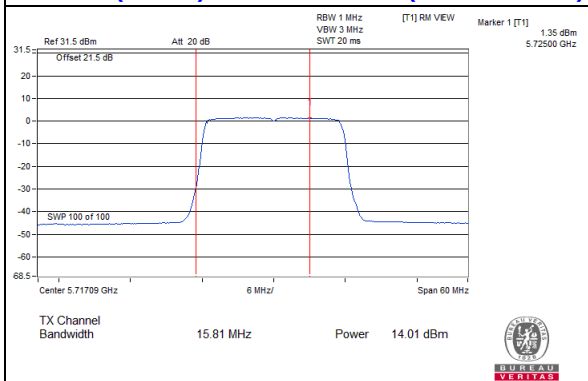
Power Limit = 11dBm + 10logB < U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
*50 (U-NII-2A Band)	5530	83.55	30.21 > 24
114	5690	167.37	33.23 > 24

For channel straddling 5725MHz of Power CDD Mode

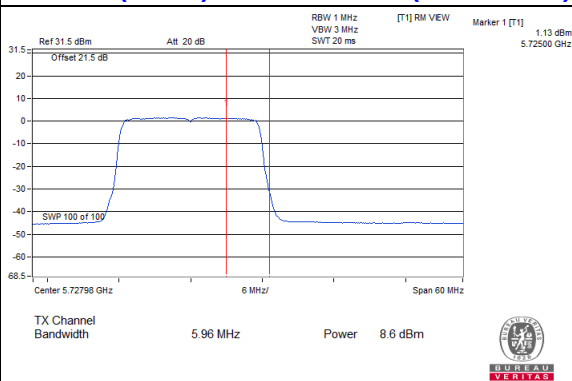


Spectrum Plot Value of Power

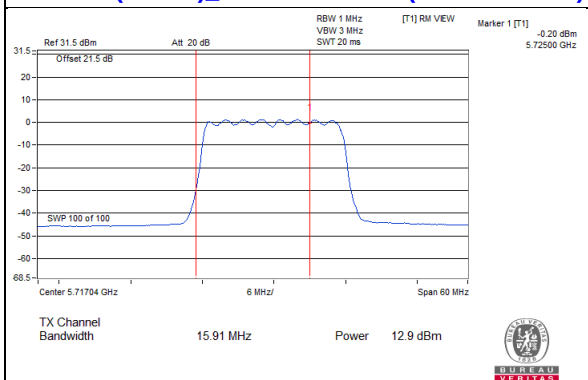
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)



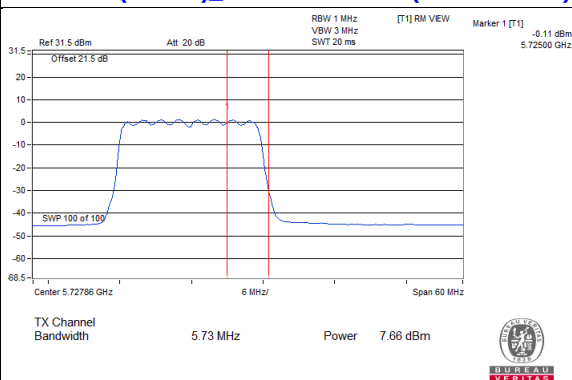
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)



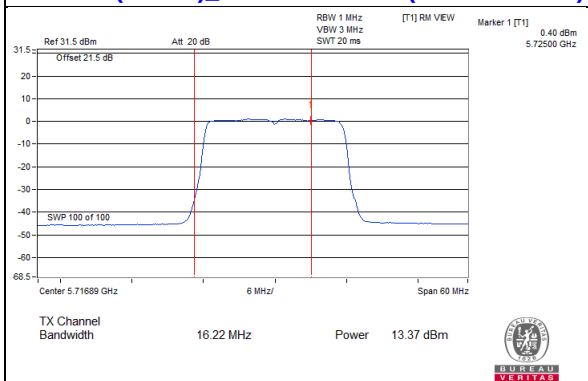
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)



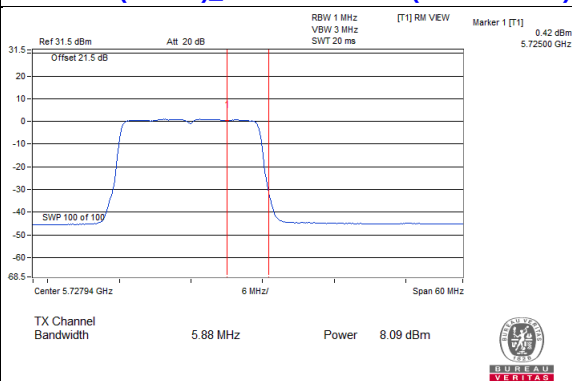
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)



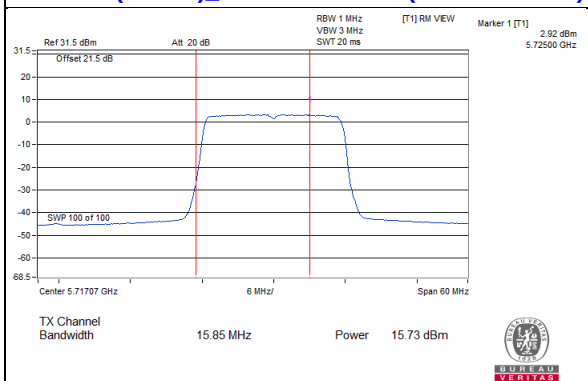
802.11ac (VHT20)_Chain 2 / CH144 (U-NII-2C Band)



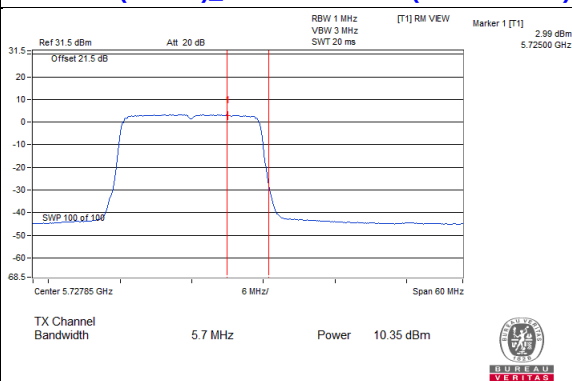
802.11ac (VHT20)_Chain 2 / CH144 (U-NII-3 Band)

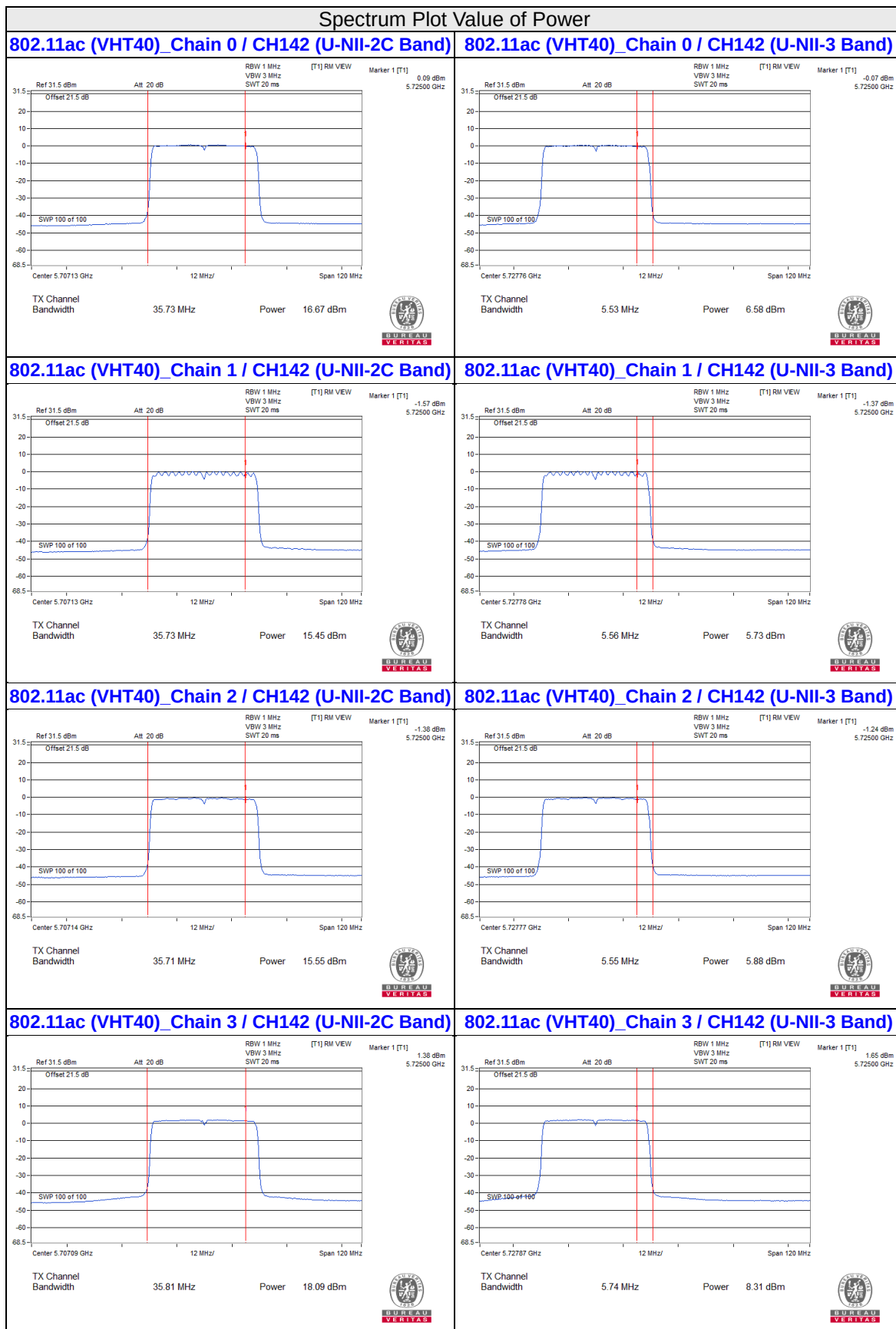


802.11ac (VHT20)_Chain 3 / CH144 (U-NII-2C Band)



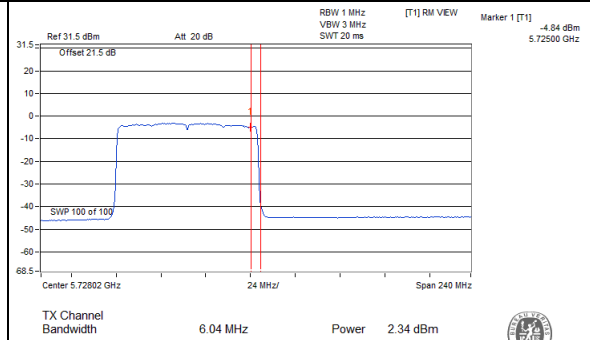
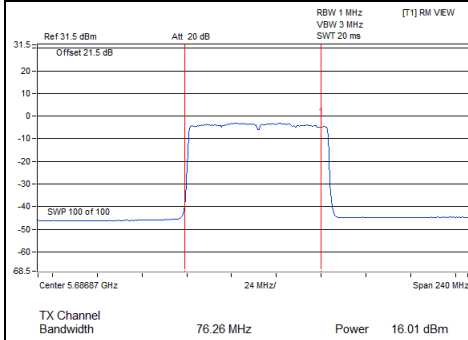
802.11ac (VHT20)_Chain 3 / CH144 (U-NII-3 Band)



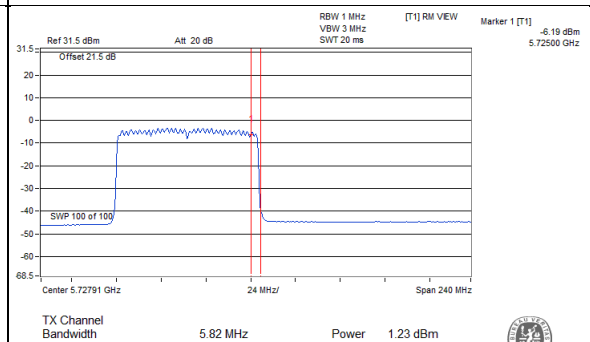
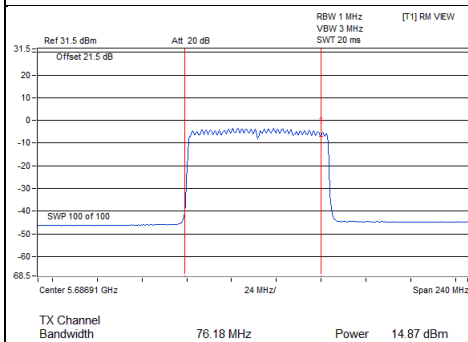


Spectrum Plot Value of Power

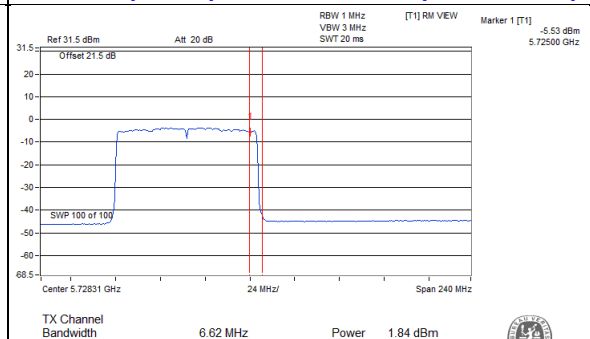
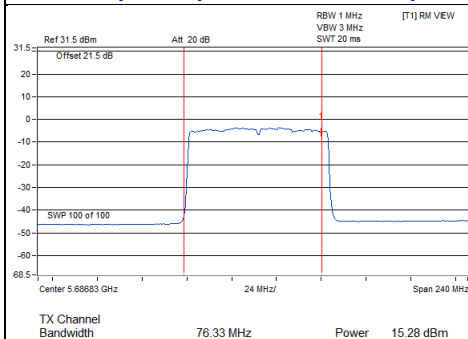
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)



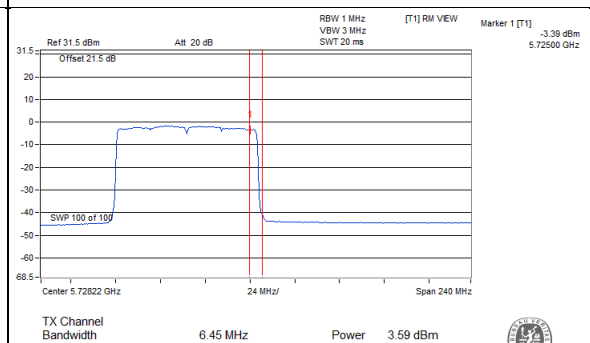
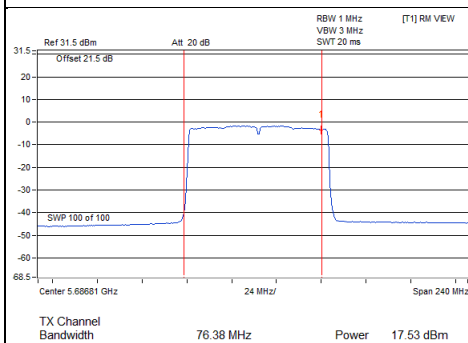
802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)



802.11ac (VHT80)_Chain 2 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 2 / CH138 (U-NII-3 Band)

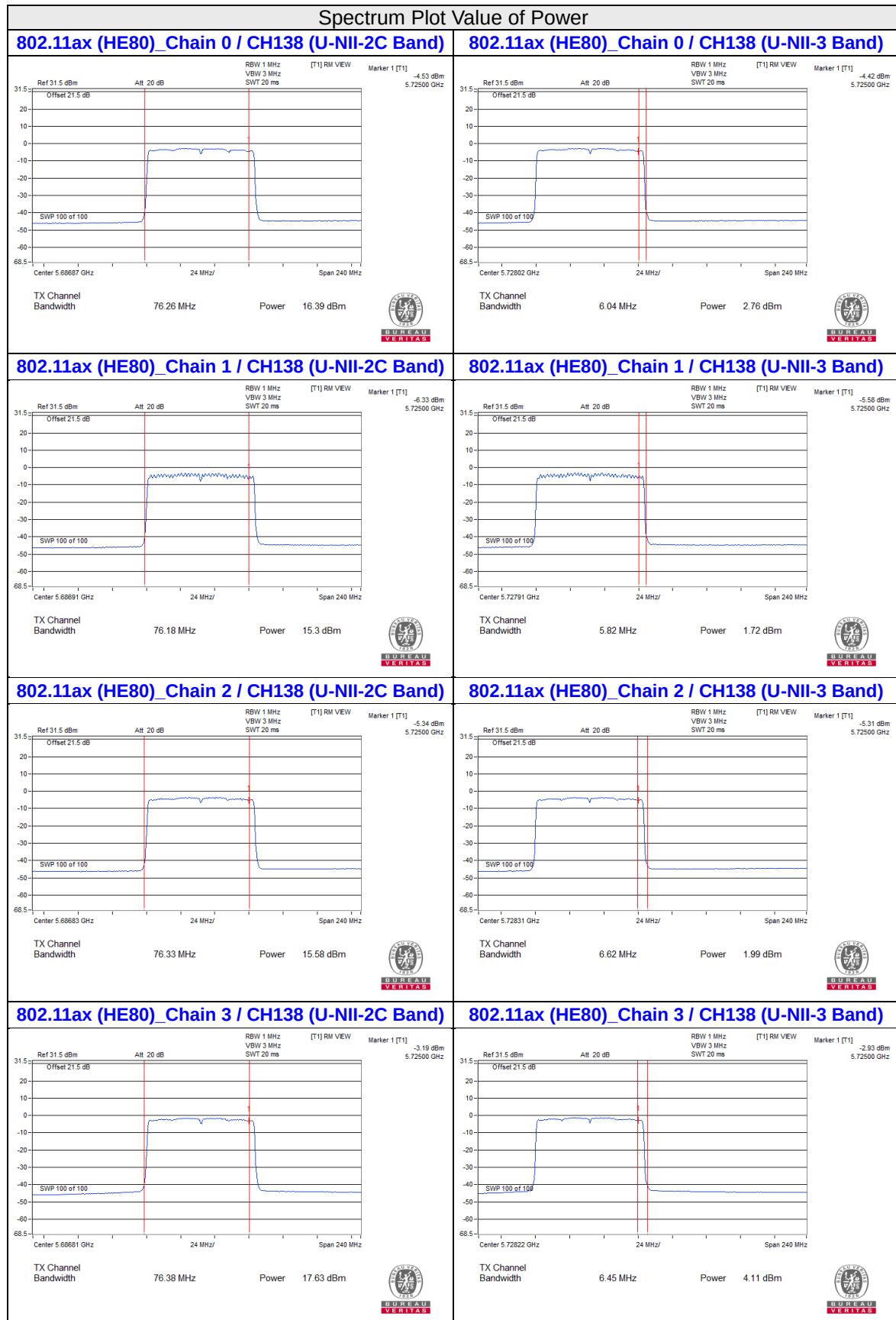


802.11ac (VHT80)_Chain 3 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 3 / CH138 (U-NII-3 Band)







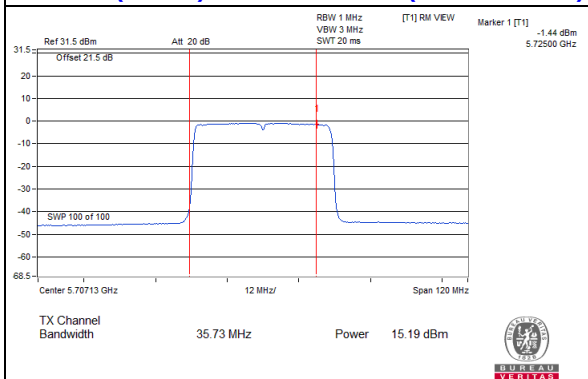


Beamforming Mode

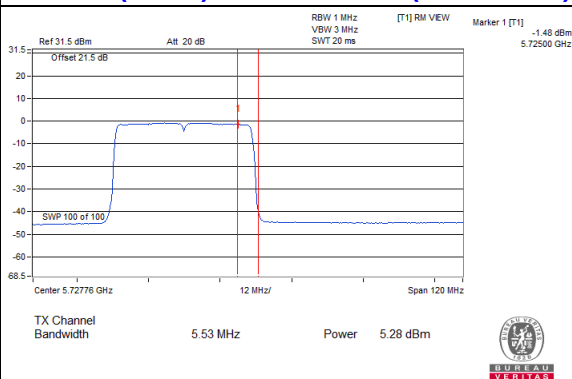


Spectrum Plot Value of Power

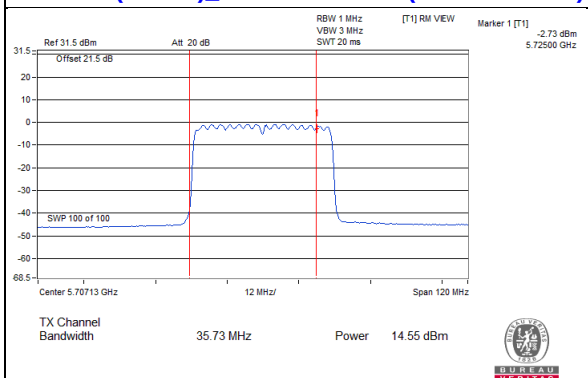
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band)



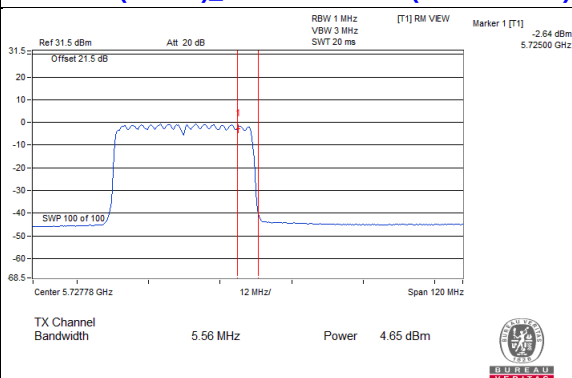
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)



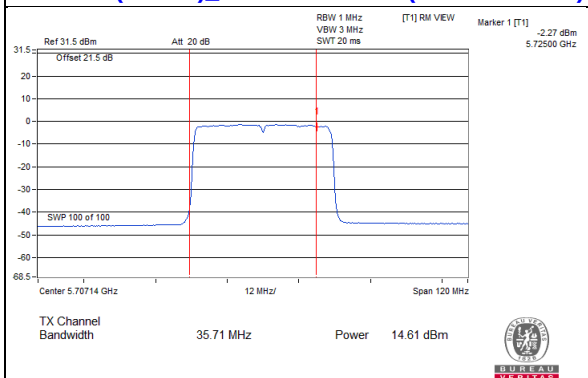
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)



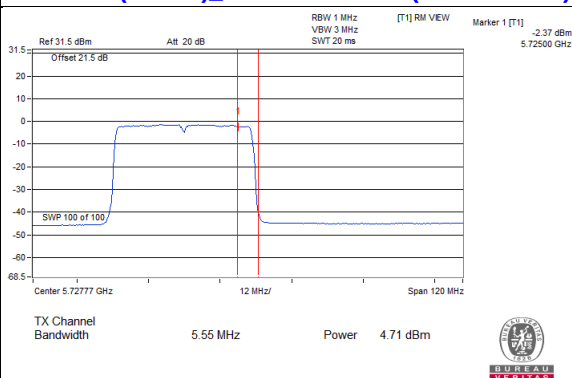
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)



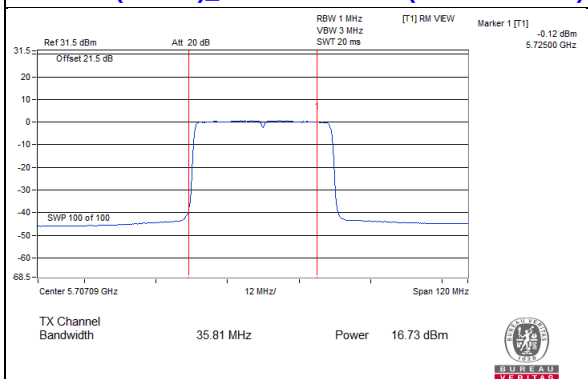
802.11ac (VHT40)_Chain 2 / CH142 (U-NII-2C Band)



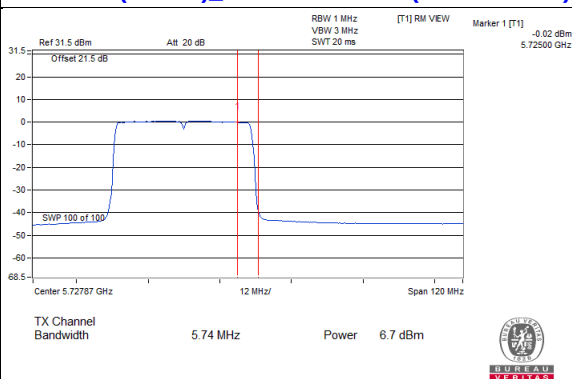
802.11ac (VHT40)_Chain 2 / CH142 (U-NII-3 Band)



802.11ac (VHT40)_Chain 3 / CH142 (U-NII-2C Band)

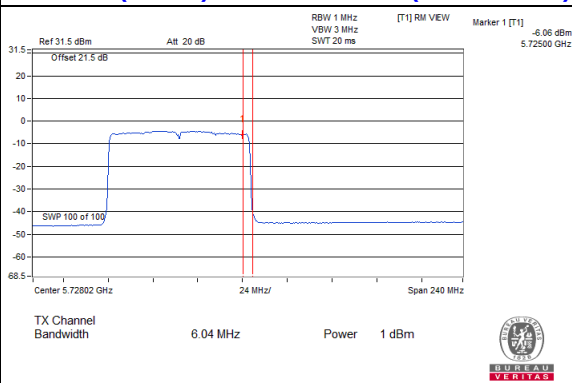
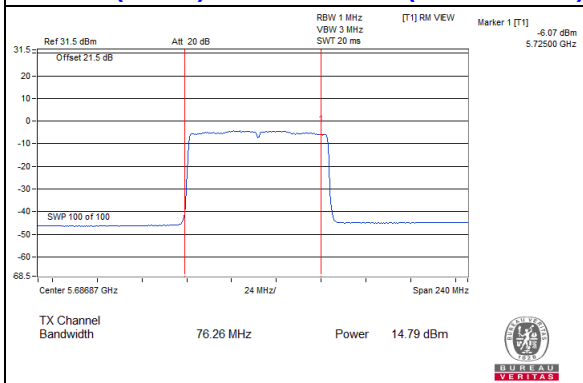


802.11ac (VHT40)_Chain 3 / CH142 (U-NII-3 Band)

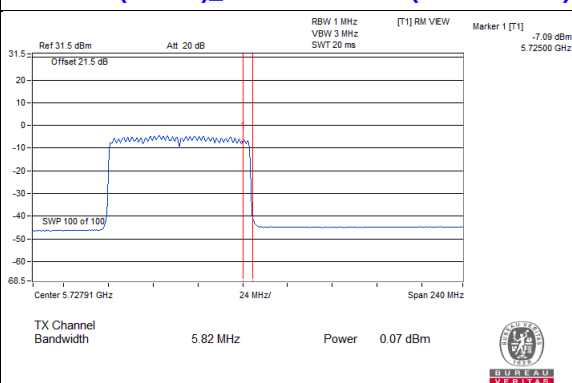
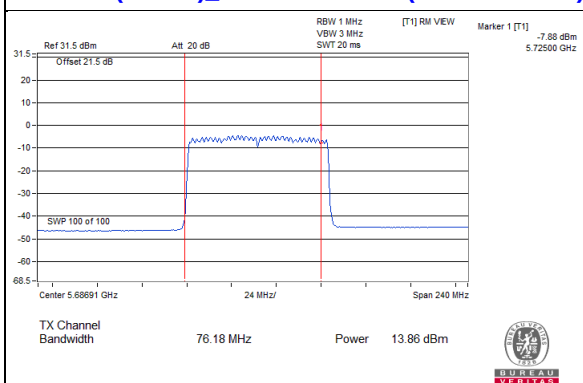


Spectrum Plot Value of Power

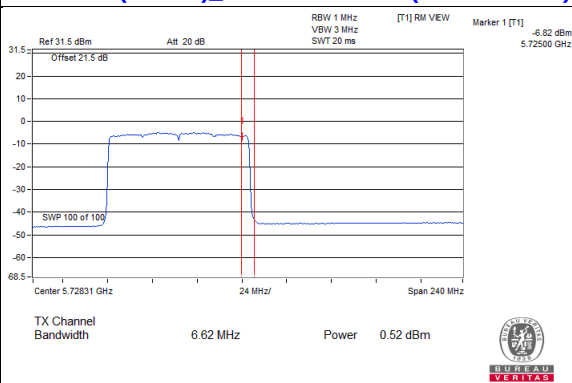
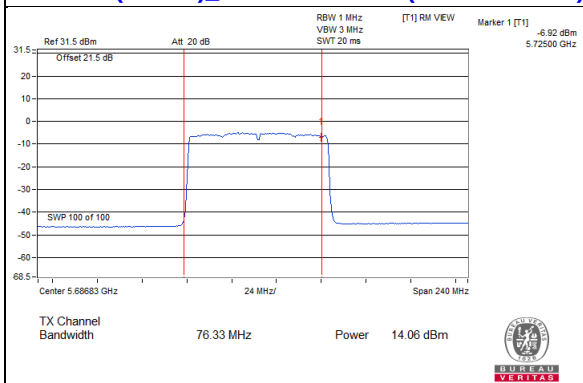
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)



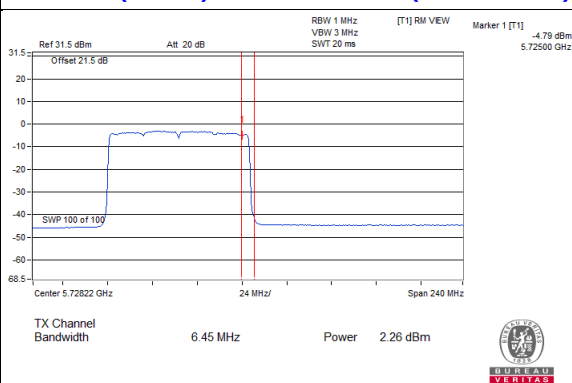
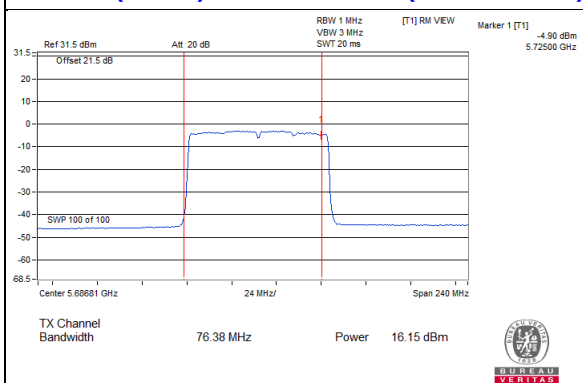
802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)



802.11ac (VHT80)_Chain 2 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 2 / CH138 (U-NII-3 Band)



802.11ac (VHT80)_Chain 3 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 3 / CH138 (U-NII-3 Band)









For channel straddling 5250MHz of Power CDD Mode





Beamforming Mode





CDD Mode

26dB OCCUPIED BANDWIDTH

802.11a

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	21.6	21.62	21.87	21.79
60	5300	21.68	21.69	21.85	21.81
64	5320	21.66	21.67	21.81	21.76
100	5500	21.65	21.95	21.92	21.79
116	5580	21.69	22.02	21.91	21.74
140	5700	21.62	21.92	21.95	21.77
144 (U-NII-2C Band)	5720	15.87	15.91	15.91	15.87

802.11ax (HE20)

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	21.83	21.7	22.16	21.64
60	5300	21.78	21.69	22.14	21.47
64	5320	22.01	21.71	22.12	21.62
100	5500	21.84	21.71	22.11	21.56
116	5580	21.8	21.72	22.08	21.74
140	5700	21.8	21.74	22.11	21.62
144 (U-NII-2C Band)	5720	15.81	15.91	16.22	15.85

802.11ax (HE40)

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
54	5270	41.36	41.34	41.29	41.54
62	5310	41.18	41.5	41.23	41.47
102	5510	41.26	41.27	41.39	41.47
110	5550	41.35	41.27	41.4	41.57
134	5670	41.41	41.25	41.33	41.54
142 (U-NII-2C Band)	5710	35.73	35.73	35.71	35.81

802.11ax (HE80)

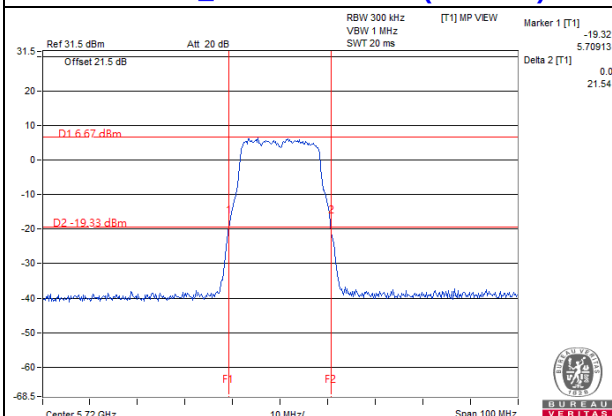
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
58	5290	82.63	82.33	83.08	82.85
106	5530	82.72	82.12	83.03	82.97
122	5610	82.61	82.68	82.81	82.77
138 (U-NII-2C Band)	5690	76.26	76.18	76.33	76.38

802.11ax (HE160)

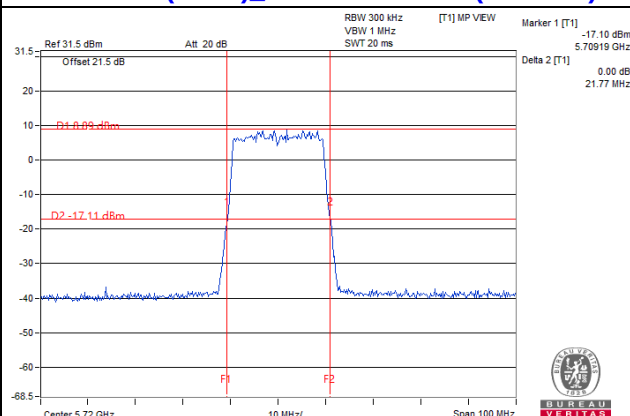
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
50 (U-NII-2A Band)	5250	84.3	83.55	84.16	83.86
114	5570	168.98	168.73	168.59	167.37

Spectrum Plot of Worst Value

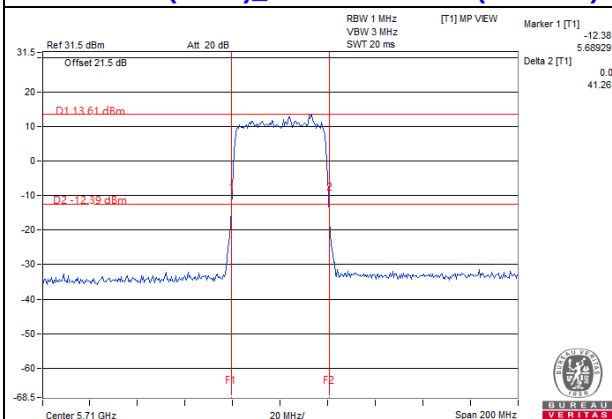
802.11a_Chain 0 / CH144 (U-NII-2C)



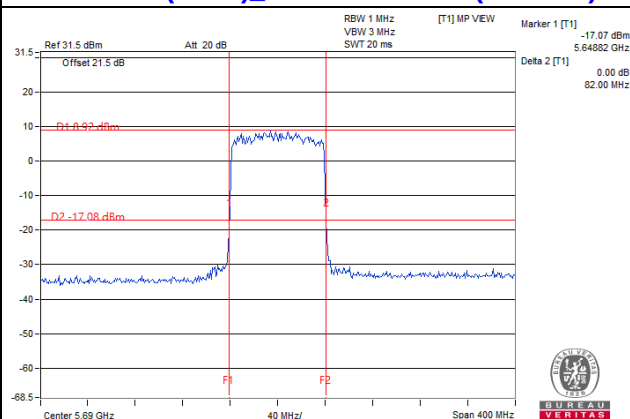
802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C)



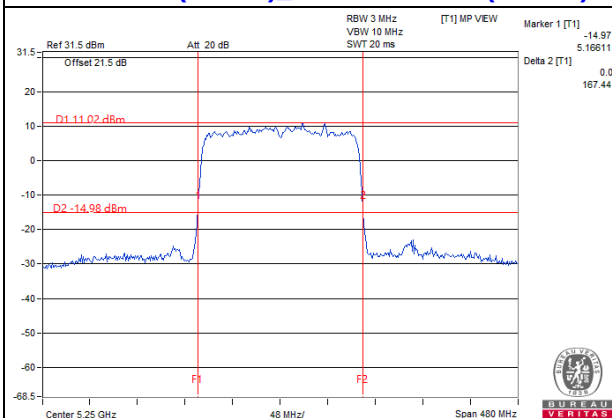
802.11ax (HE40)_Chain 2 / CH142 (U-NII-2C)



802.11ax (HE80)_Chain 1 / CH138 (U-NII-2C)



802.11ax (HE160)_Chain 1 / CH50 (U-NII-1)

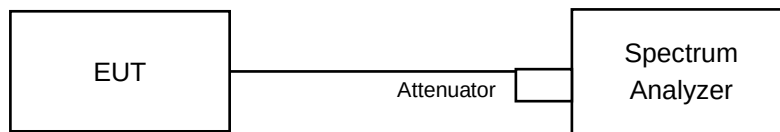


Note:

- For CH144 (U-NII-2C) = 5725MHz - Marker 1
- For CH142 (U-NII-2C) = 5725MHz - Marker 1
- For CH138 (U-NII-2C) = 5725MHz - Marker 1
- For CH50 (U-NII-2A) = Delta 2 – (5250MHz - Marker 1)

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to SAMPLE. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean power of a given emission.

4.4.4 Test Results

CDD Mode

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	16.92	17.04	17.16	16.92
60	5300	16.92	17.28	17.16	16.8
64	5320	16.92	17.16	17.16	16.92
100	5500	16.92	17.4	17.16	16.92
116	5580	16.92	17.4	17.04	16.92
140	5700	16.92	17.28	17.04	16.92
144 (U-NII-2C Band)	5720	13.52	13.52	13.64	13.52
144 (U-NII-3 Band)	5720	3.4	3.64	3.4	3.4

802.11ax (HE20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	19.08	19.2	19.2	19.08
60	5300	19.08	19.2	19.32	19.08
64	5320	19.08	19.08	19.2	19.08
100	5500	19.08	19.08	19.32	19.08
116	5580	19.08	19.2	19.2	19.08
140	5700	19.2	19.2	19.32	19.2
144 (U-NII-2C Band)	5720	14.6	14.72	14.72	14.6
144 (U-NII-3 Band)	5720	4.48	4.48	4.48	4.48

802.11ax (HE40)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
54	5270	37.68	37.68	37.68	37.68
62	5310	37.68	37.92	37.68	37.68
102	5510	37.68	37.68	37.68	37.68
110	5550	37.68	37.92	37.68	37.68
134	5670	37.68	37.68	37.68	37.68
142 (U-NII-2C Band)	5710	34.2	33.96	33.96	33.96
142 (U-NII-3 Band)	5710	3.72	3.72	3.72	3.72

802.11ax (HE80)

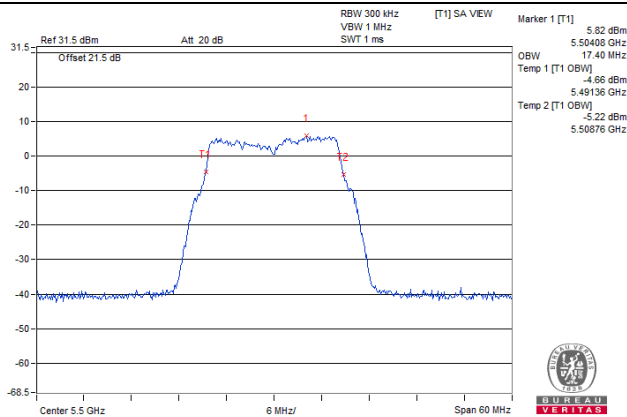
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
58	5290	77.28	77.28	77.28	77.28
106	5530	77.28	77.28	77.28	77.28
122	5610	77.28	77.28	77.28	77.28
138 (U-NII-2C Band)	5690	73.88	73.88	73.88	73.88
138 (U-NII-3 Band)	5690	3.4	3.4	3.4	3.4

802.11ax (HE160)

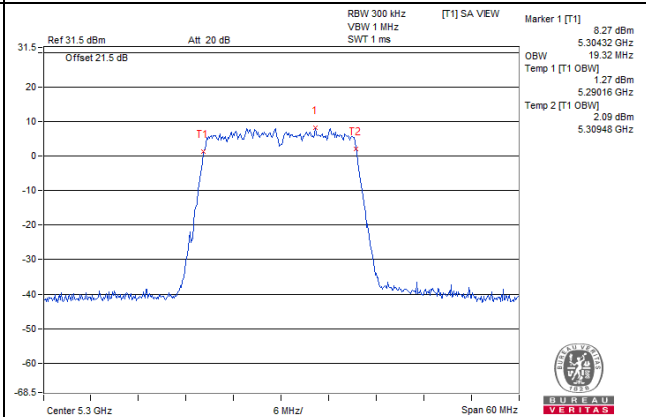
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
50 (U-NII-1 Band)	5250	77.76	77.76	77.76	77.76
50 (U-NII-2A Band)	5250	77.76	77.76	77.76	77.76
114	5570	155.52	155.52	155.52	155.52

Spectrum Plot of Max. Value

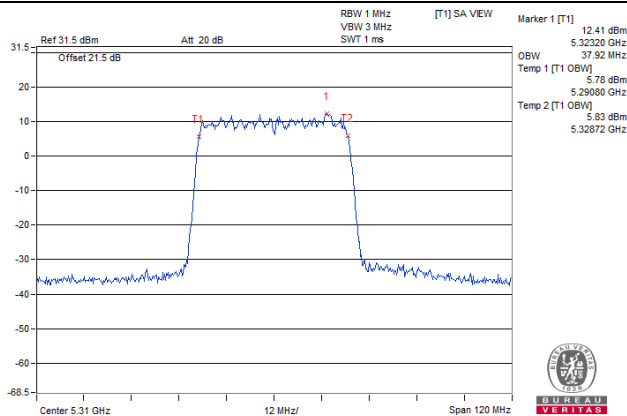
802.11a_Chain 1 / CH100



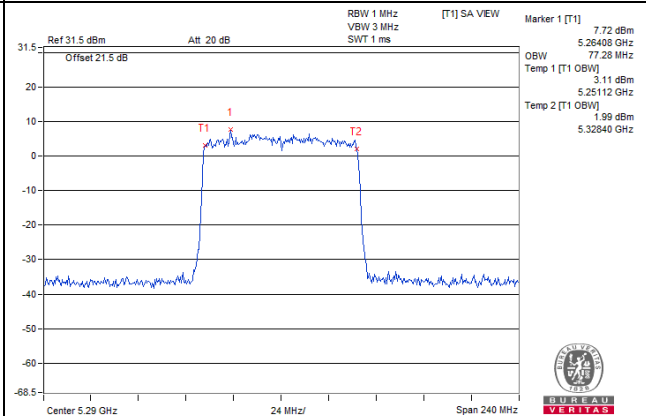
802.11ax (HE20)_Chain 2 / CH60



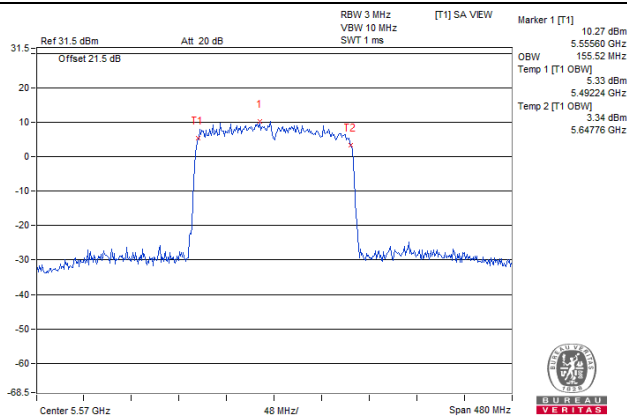
802.11ax (HE40)_Chain 1 / CH62



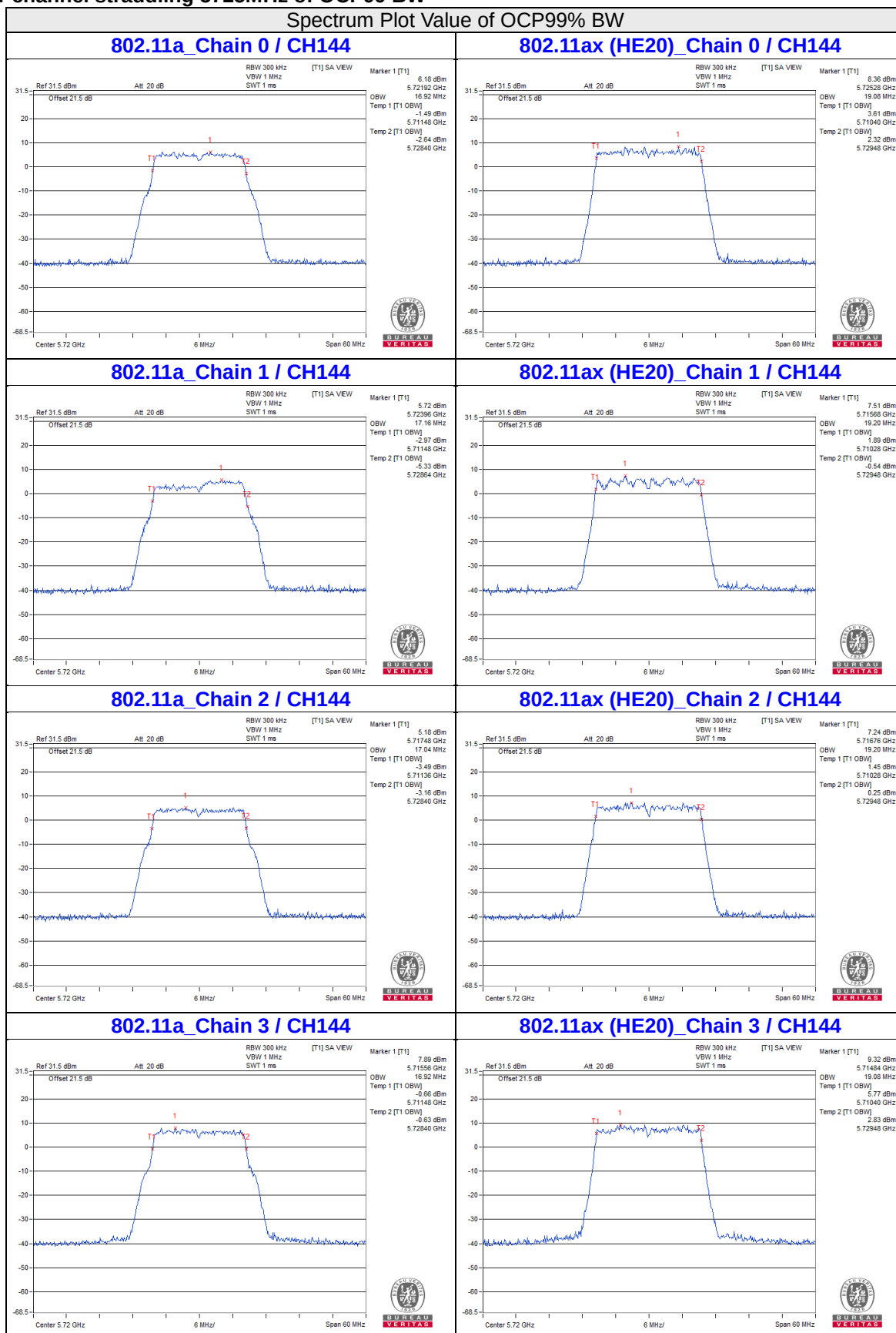
802.11ax (HE80)_Chain 0 / CH58



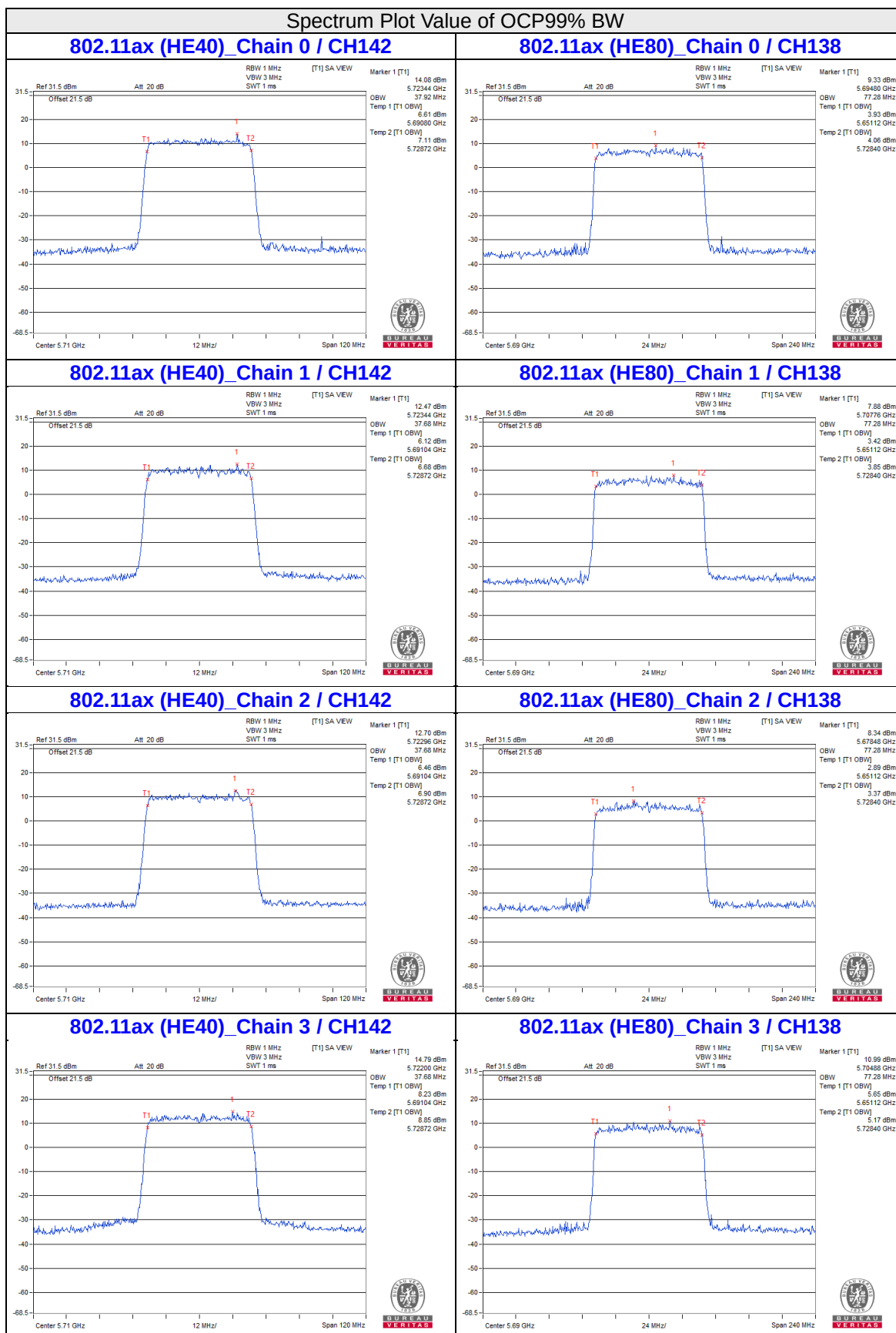
802.11ax (HE160)_Chain 0 / CH114



For channel straddling 5725MHz of OCP99 BW

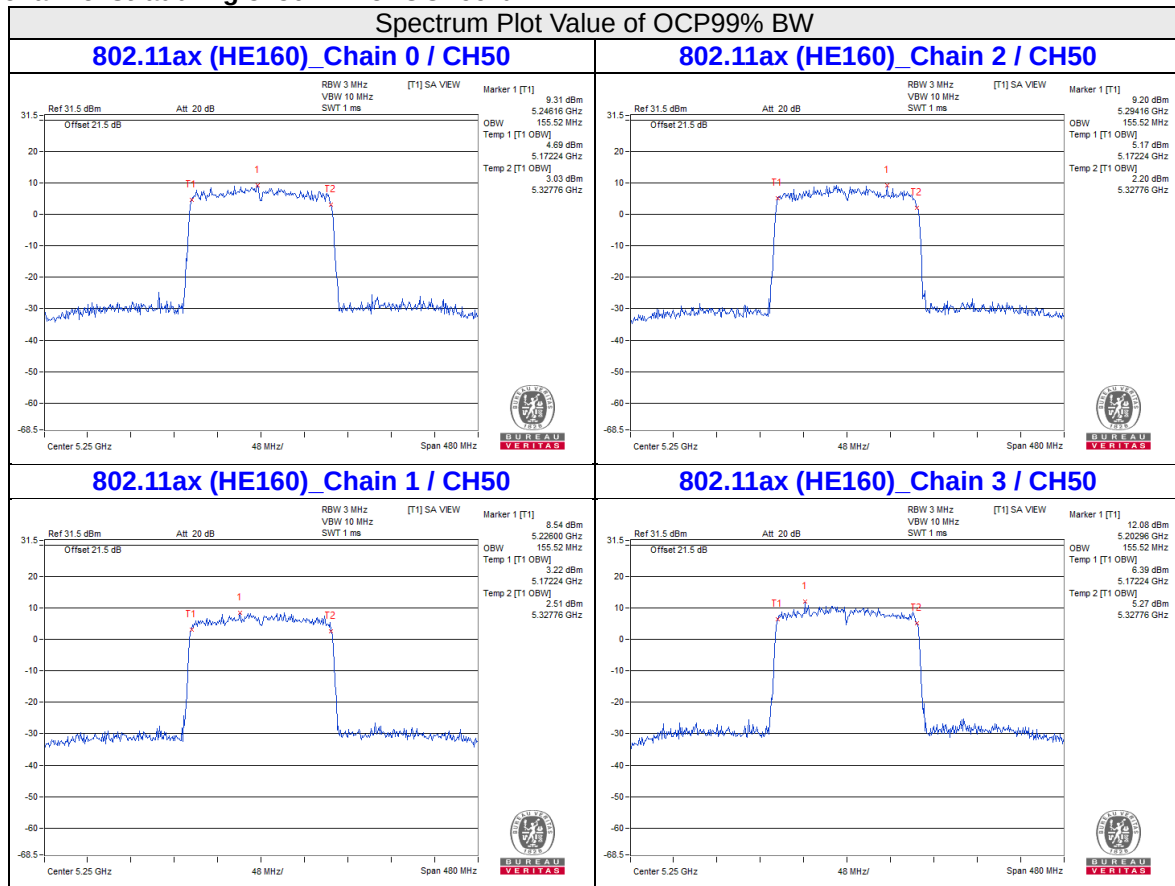


Note: For CH144 (U-NII-2C) = 5725MHz - Temp 1
For CH144 (U-NII-3) = Temp 2 - 5725MHz



Note: For CH142 (U-NII-2C) = 5725MHz - Temp 1
 For CH138 (U-NII-2C) = 5725MHz - Temp 1
 For CH142 (U-NII-3) = Temp 2 - 5725MHz
 For CH138 (U-NII-3) = Temp 2 - 5725MHz

For channel straddling 5250MHz of OCP99% BW



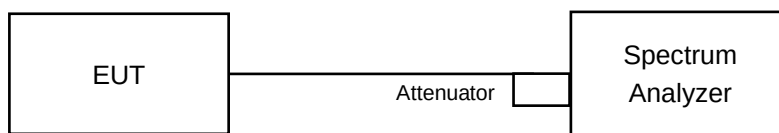
Note: For CH50 (U-NII-1) = 5250MHz – Temp 1
For CH50 (U-NII-2A) = Temp 2 – 5250MHz

4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
	√	Indoor Access Point	
		Client device	11dBm/ MHz
U-NII-2A		√	11dBm/ MHz
U-NII-2C		√	11dBm/ MHz
U-NII-3		√	30dBm/ 500kHz

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3. Sweep time = auto, trigger set to "free run".
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value

For U-NII-3 band:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(500\text{ kHz}/300\text{kHz})$
5. Sweep time = auto, trigger set to "free run".
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value and add $10\log(1/\text{duty cycle})$

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

CDD Mode

For U-NII-1, U-NII-2A, U-NII-2C band:
802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
52	5260	1.78	2.83	2.03	3.50	8.61	10.02	Pass
60	5300	2.06	3.13	1.91	3.35	8.68	10.02	Pass
64	5320	1.99	3.01	1.66	3.17	8.53	10.02	Pass
100	5500	2.52	1.92	1.84	3.36	8.47	9.91	Pass
116	5580	2.53	1.87	1.58	3.49	8.45	9.91	Pass
140	5700	1.83	1.76	1.03	3.33	8.09	9.91	Pass
144 (U-NII-2C Band)	5720	1.93	1.84	0.96	3.25	8.09	9.91	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-2A: The directional gain = 6.98dBi > 6dBi, so the power density limit shall be reduced to 11-(6.98-6) = 10.02 dBm.
3. For U-NII-2C: The directional gain = 7.09dBi > 6dBi, so the power density limit shall be reduced to 11-(7.09-6) = 9.91 dBm.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
52	5260	2.05	2.94	1.78	3.43	8.62	10.02	Pass
60	5300	2.01	2.84	1.92	3.41	8.61	10.02	Pass
64	5320	2.06	2.69	1.94	3.51	8.62	10.02	Pass
100	5500	2.31	2.38	1.82	3.51	8.57	9.91	Pass
116	5580	2.35	1.95	1.61	3.63	8.48	9.91	Pass
140	5700	1.97	1.36	1.32	3.36	8.11	9.91	Pass
144 (U-NII-2C Band)	5720	1.82	1.35	1.17	3.15	7.97	9.91	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-2A: The directional gain = 6.98dBi > 6dBi, so the power density limit shall be reduced to 11-(6.98-6) = 10.02 dBm.
3. For U-NII-2C: The directional gain = 7.09dBi > 6dBi, so the power density limit shall be reduced to 11-(7.09-6) = 9.91 dBm.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
54	5270	0.40	0.82	0.01	1.85	6.85	10.02	Pass
62	5310	0.23	0.64	0.02	1.95	6.80	10.02	Pass
102	5510	1.05	0.43	0.05	1.91	6.94	9.91	Pass
110	5550	0.68	0.60	0.17	1.95	6.92	9.91	Pass
134	5670	0.37	-0.05	-0.26	1.83	6.57	9.91	Pass
142 (U-NII-2C Band)	5710	0.81	0.65	0.12	1.96	6.96	9.91	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-2A: The directional gain = 6.98dBi > 6dBi, so the power density limit shall be reduced to 11-(6.98-6) = 10.02 dBm.
3. For U-NII-2C: The directional gain = 7.09dBi > 6dBi, so the power density limit shall be reduced to 11-(7.09-6) = 9.91 dBm.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
58	5290	-4.45	-5.20	-4.34	-3.06	1.83	10.02	Pass
106	5530	-2.68	-3.17	-3.51	-1.44	3.39	9.91	Pass
122	5610	-2.93	-3.27	-3.96	-1.94	3.06	9.91	Pass
138 (U-NII-2C Band)	5690	-2.68	-3.17	-3.58	-1.34	3.41	9.91	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-2A: The directional gain = 6.98dBi > 6dBi, so the power density limit shall be reduced to 11-(6.98-6) = 10.02 dBm.
3. For U-NII-2C: The directional gain = 7.09dBi > 6dBi, so the power density limit shall be reduced to 11-(7.09-6) = 9.91 dBm.

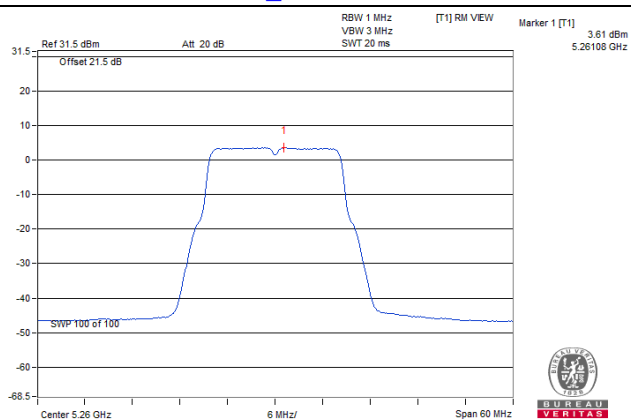
802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
50 (U-NII-1 Band)	5250	-6.71	-6.51	-6.78	-4.98	-0.16	15.77	Pass
50 (U-NII-2A Band)	5250	-6.62	-6.44	-6.77	-4.92	-0.10	10.02	Pass
114	5570	-5.73	-6.10	-6.36	-4.16	0.52	9.91	Pass

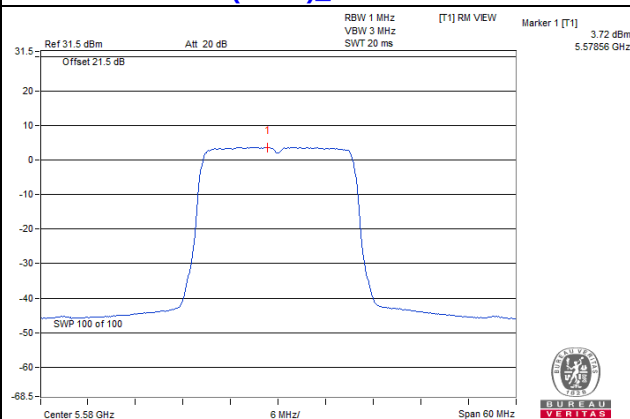
- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-1: The directional gain = 7.23 dBi > 6dBi, so the power density limit shall be reduced to $17-(7.23-6) = 15.77$ dBm.
3. For U-NII-2A: The directional gain = 6.98dBi > 6dBi, so the power density limit shall be reduced to $11-(6.98-6) = 10.02$ dBm.
4. For U-NII-2C: The directional gain = 7.09dBi > 6dBi, so the power density limit shall be reduced to $11-(7.09-6) = 9.91$ dBm.

Spectrum Plot of Worst Value

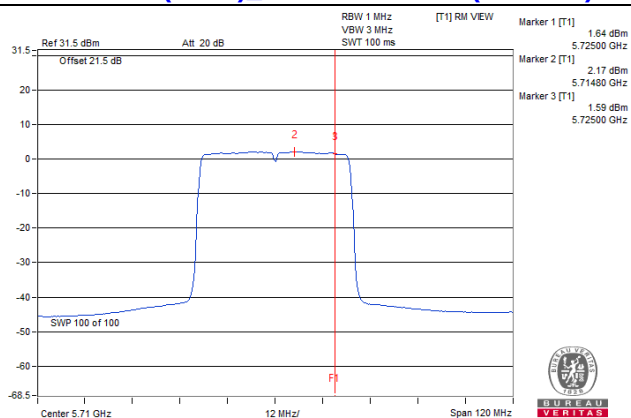
802.11a_Chain 3 / CH52



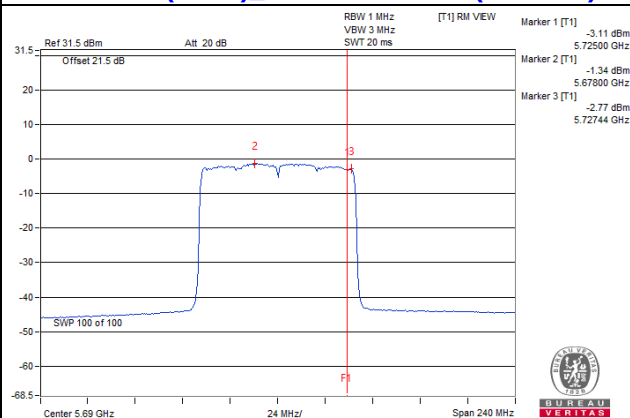
802.11ax (HE20)_Chain 3 / CH116



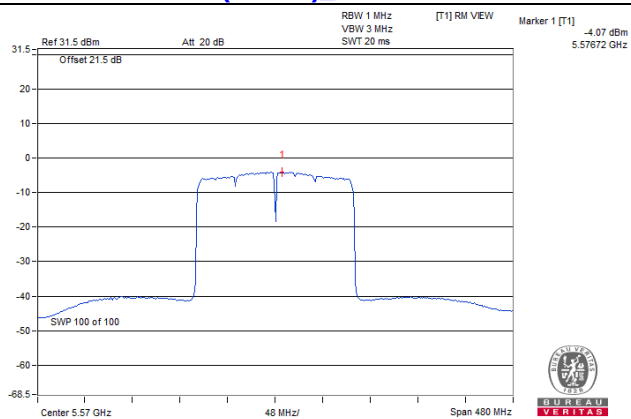
802.11ax (HE40)_Chain 3 / CH142 (U-NII-2C)



802.11ax (HE80)_Chain 3 / CH138 (U-NII-2C)



802.11ax (HE160)_Chain 3 / CH114



For U-NII-3 band:

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300 kHz)	Total PSD (dBm/500 kHz)	PSD Limit (dBm/500 kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
144 (U-NII-3 Band)	5720	-6.79	-6.75	-7.37	-5.39	-0.49	1.73	29.01	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. For U-NII-3: The directional gain = 6.99 > 6dBi, so the power density limit shall be reduced to 30-(6.99-6) = 29.01 dBm.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300 kHz)	Total PSD (dBm/500 kHz)	PSD Limit (dBm/500 kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
144 (U-NII-3 Band)	5720	-7.25	-7.77	-8.23	-6.07	-1.23	0.99	29.01	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. For U-NII-3: The directional gain = 6.99 > 6dBi, so the power density limit shall be reduced to 30-(6.99-6) = 29.01 dBm.

802.11ax (HE40)

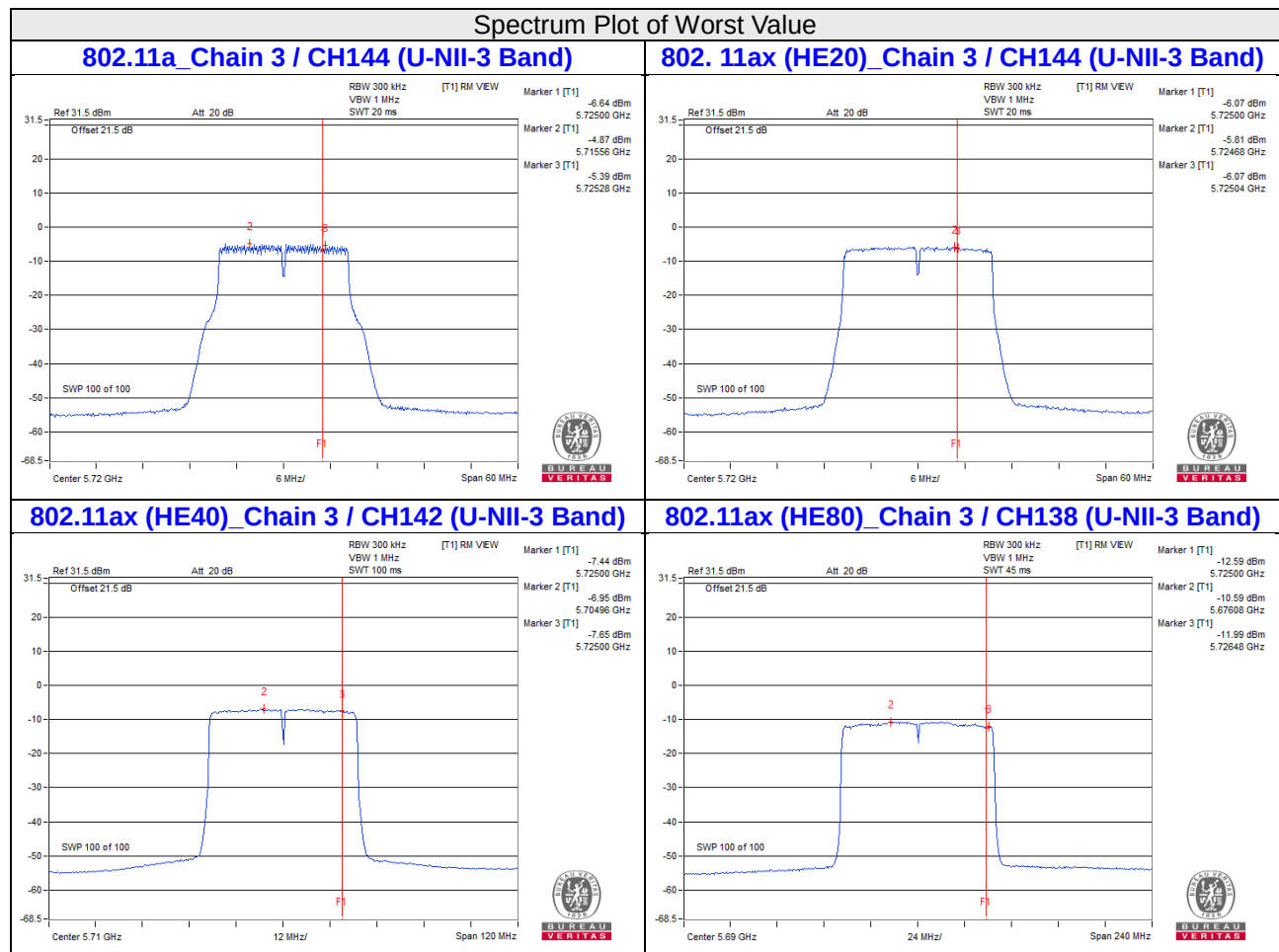
Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300 kHz)	Total PSD (dBm/500 kHz)	PSD Limit (dBm/500 kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
142 (U-NII-3 Band)	5710	-8.77	-9.22	-10.02	-7.65	-2.81	-0.59	29.01	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. For U-NII-3: The directional gain = 6.99 > 6dBi, so the power density limit shall be reduced to 30-(6.99-6) = 29.01 dBm.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300 kHz)	Total PSD (dBm/500 kHz)	PSD Limit (dBm/500 kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
138 (U-NII-3 Band)	5690	-13.35	-14.03	-13.96	-11.99	-7.23	-5.01	29.01	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. For U-NII-3: The directional gain = 6.99 > 6dBi, so the power density limit shall be reduced to 30-(6.99-6) = 29.01 dBm.

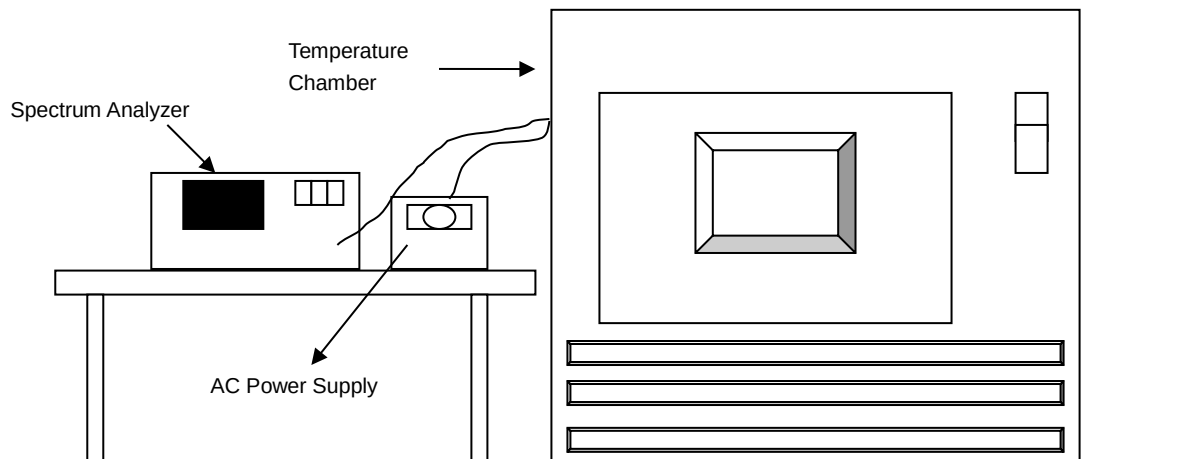


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

The frequency of the carrier signal shall be maintained within band of operation

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
- Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
- The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5260 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
40	120	5259.9857	Pass	5259.9852	Pass	5259.9861	Pass	5259.9841	Pass
30	120	5260.0145	Pass	5260.0157	Pass	5260.0135	Pass	5260.0153	Pass
20	120	5260.0063	Pass	5260.0082	Pass	5260.0091	Pass	5260.0085	Pass
10	120	5259.9824	Pass	5259.9808	Pass	5259.9827	Pass	5259.9828	Pass
0	120	5259.9928	Pass	5259.9897	Pass	5259.9905	Pass	5259.9906	Pass

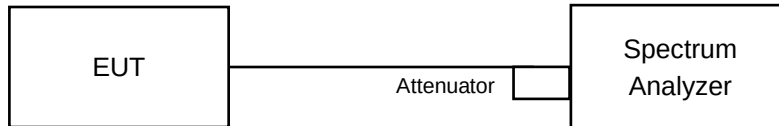
Frequency Stability Versus Voltage									
Operating Frequency: 5260 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5260.007	Pass	5260.0085	Pass	5260.0084	Pass	5260.0092	Pass
	120	5260.0063	Pass	5260.0082	Pass	5260.0091	Pass	5260.0085	Pass
	102	5260.0062	Pass	5260.0088	Pass	5260.0094	Pass	5260.0076	Pass

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

- Set resolution bandwidth (RBW) = 100kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequency.

4.7.7 Test Results

CDD Mode

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
144 (U-NII-3 Band)	5720	3.11	3.11	3.16	3.15	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
144 (U-NII-3 Band)	5720	4.46	3.96	4.42	4.45	0.5	Pass

802.11ax (HE40)

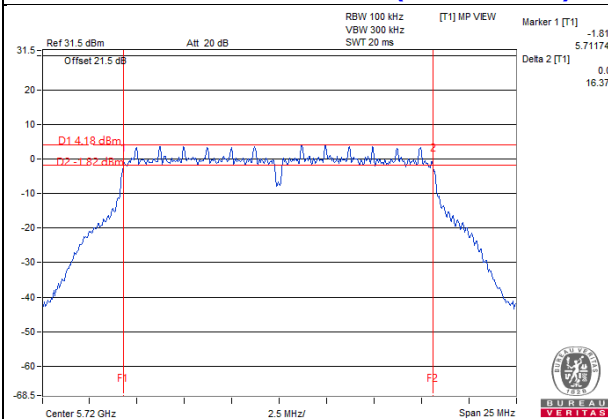
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
142 (U-NII-3 Band)	5710	3.68	3.42	3.81	3.43	0.5	Pass

802.11ax (HE80)

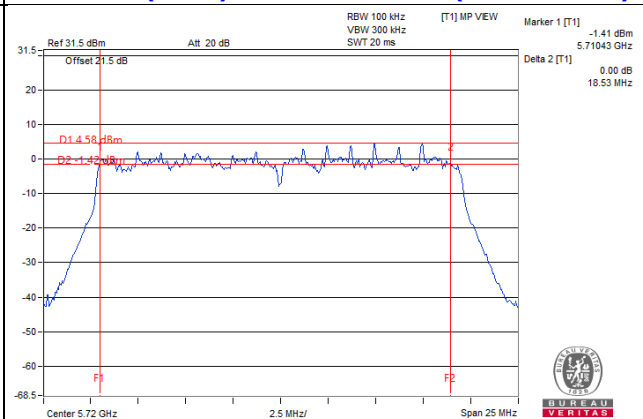
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
138 (U-NII-3 Band)	5690	3.19	3.11	3.25	3.32	0.5	Pass

Spectrum Plot of Worst Value

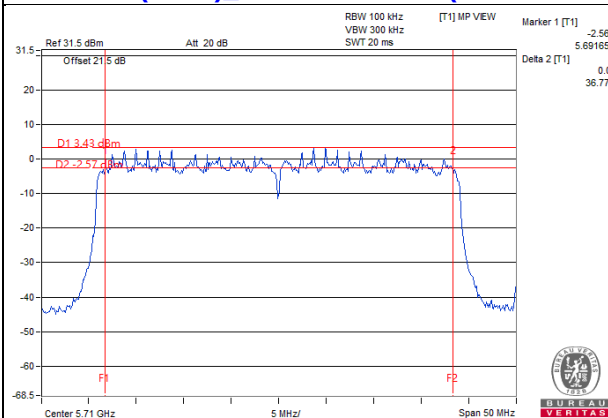
802.11a_Chain 0 / CH144 (U-NII-3 Band)



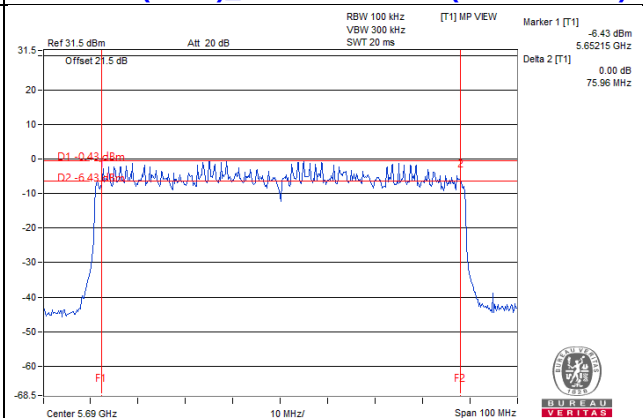
802.11ax (HE20)_Chain 1 / CH144 (U-NII-3 Band)



802.11ax (HE40)_Chain 1 / CH142 (U-NII-3 Band)



802.11ax (HE80)_Chain 1 / CH138 (U-NII-3 Band)

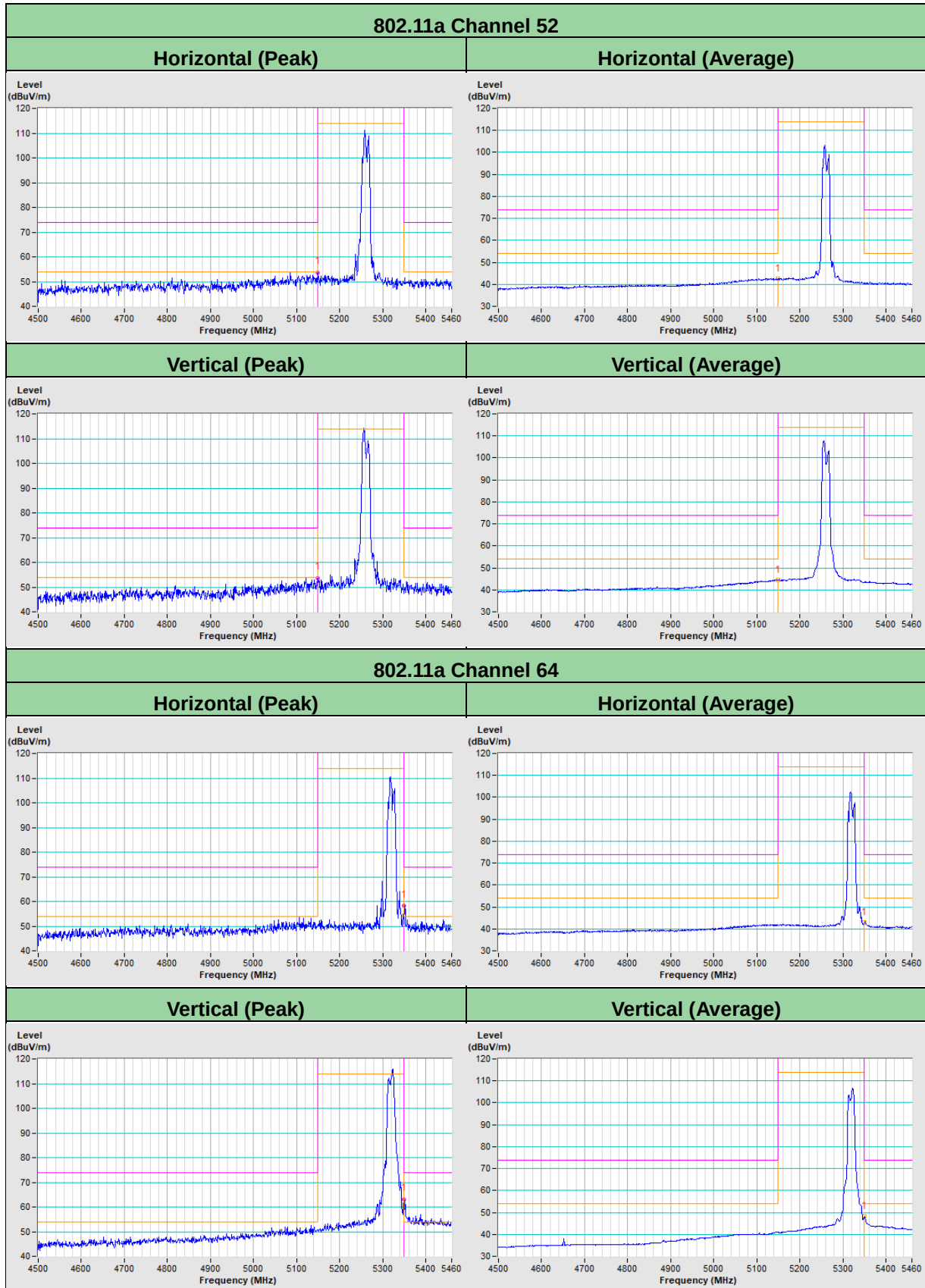


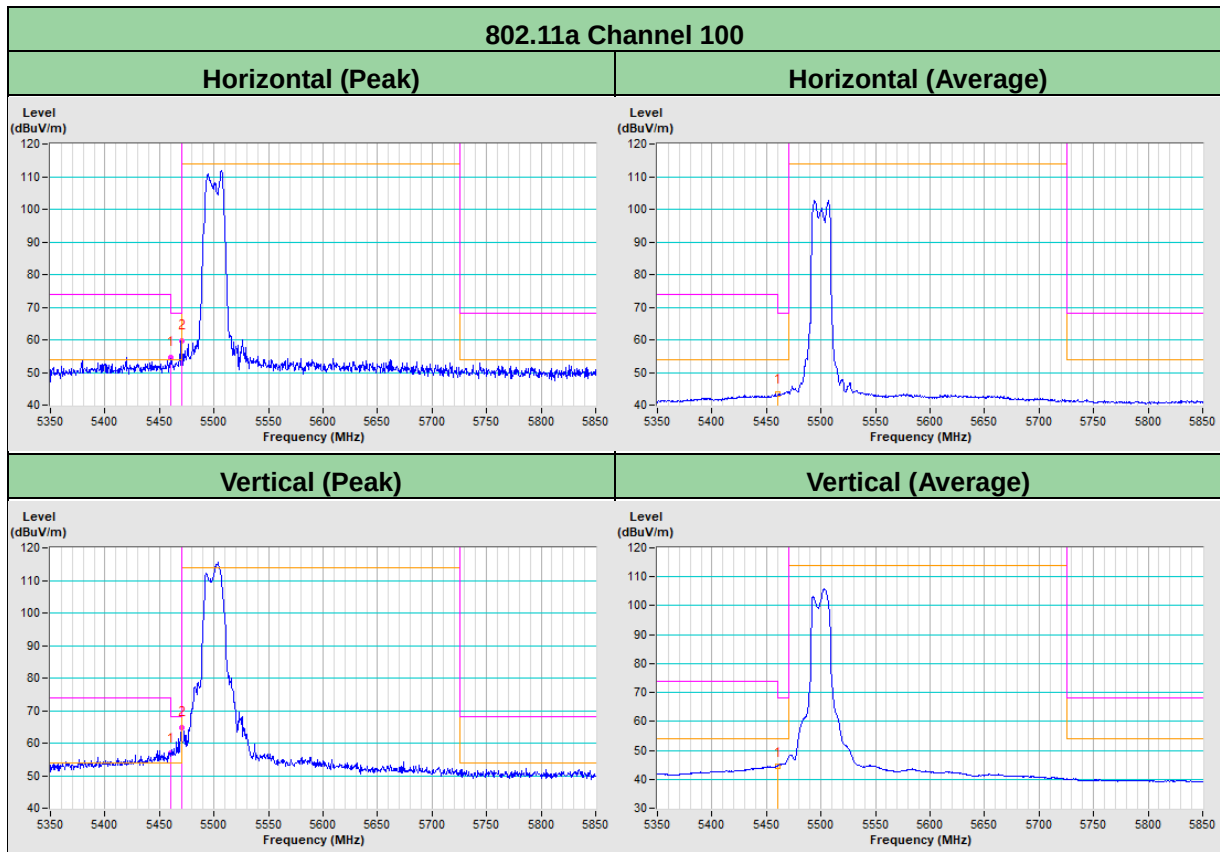
Note: The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

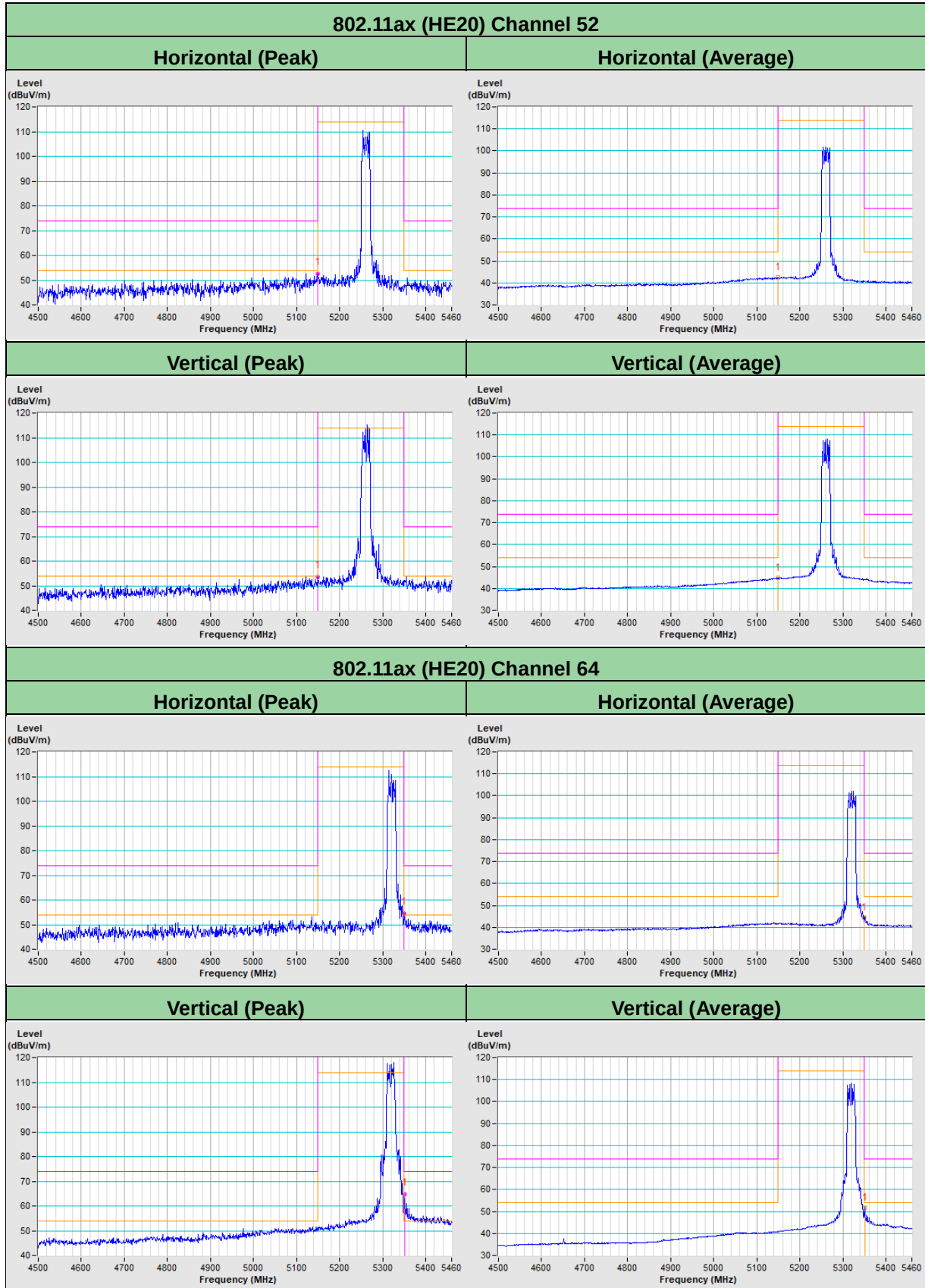
5 Pictures of Test Arrangements

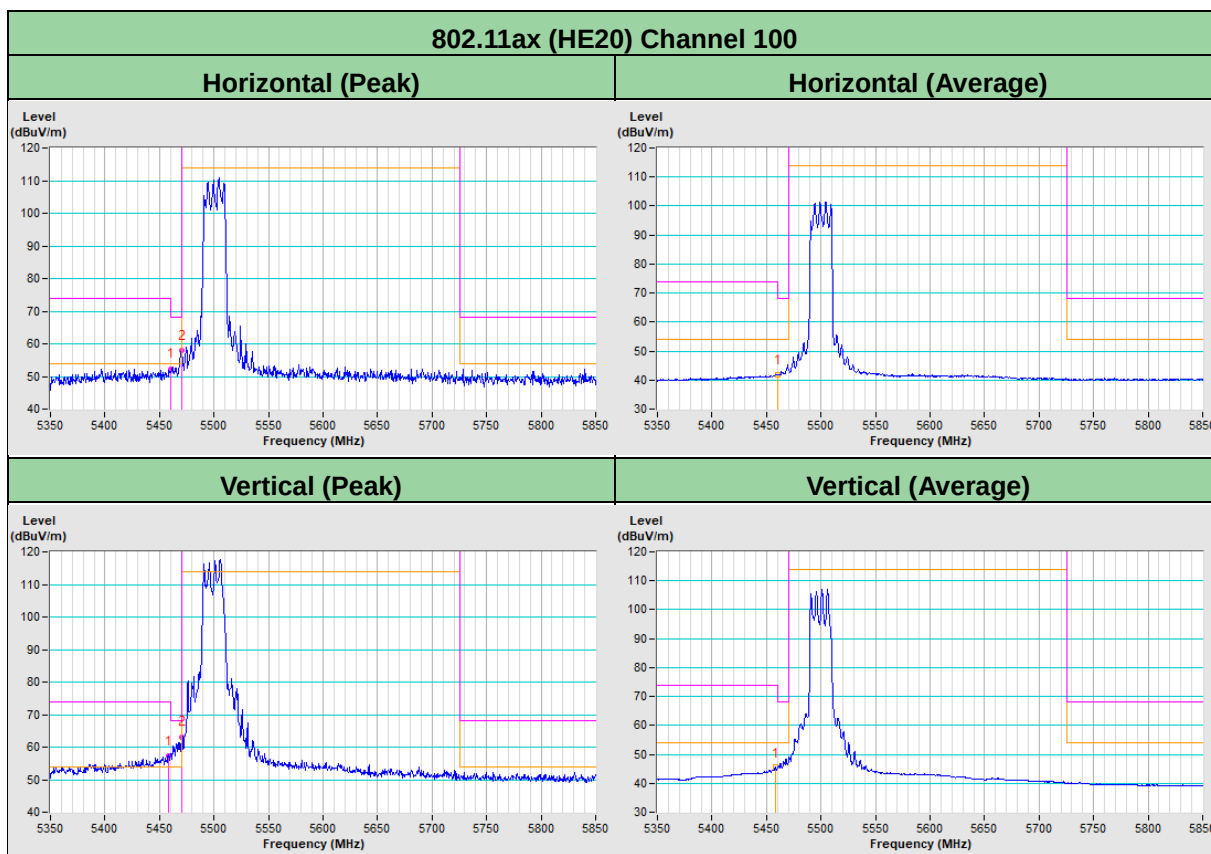
Please refer to the attached file (Test Setup Photo).

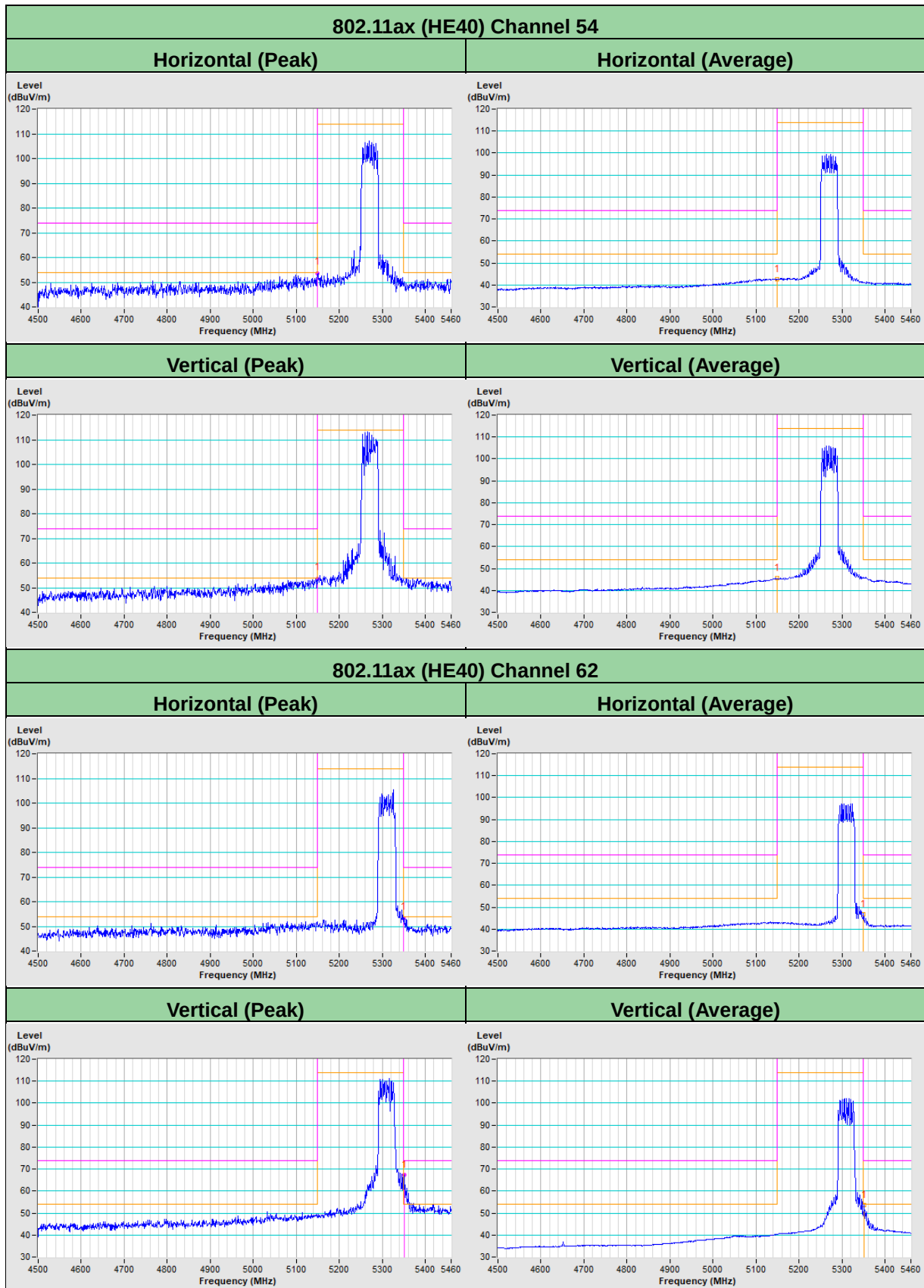
Annex A - Band-Edge Measurement (For U-NII-2A, U-NII-2C band)

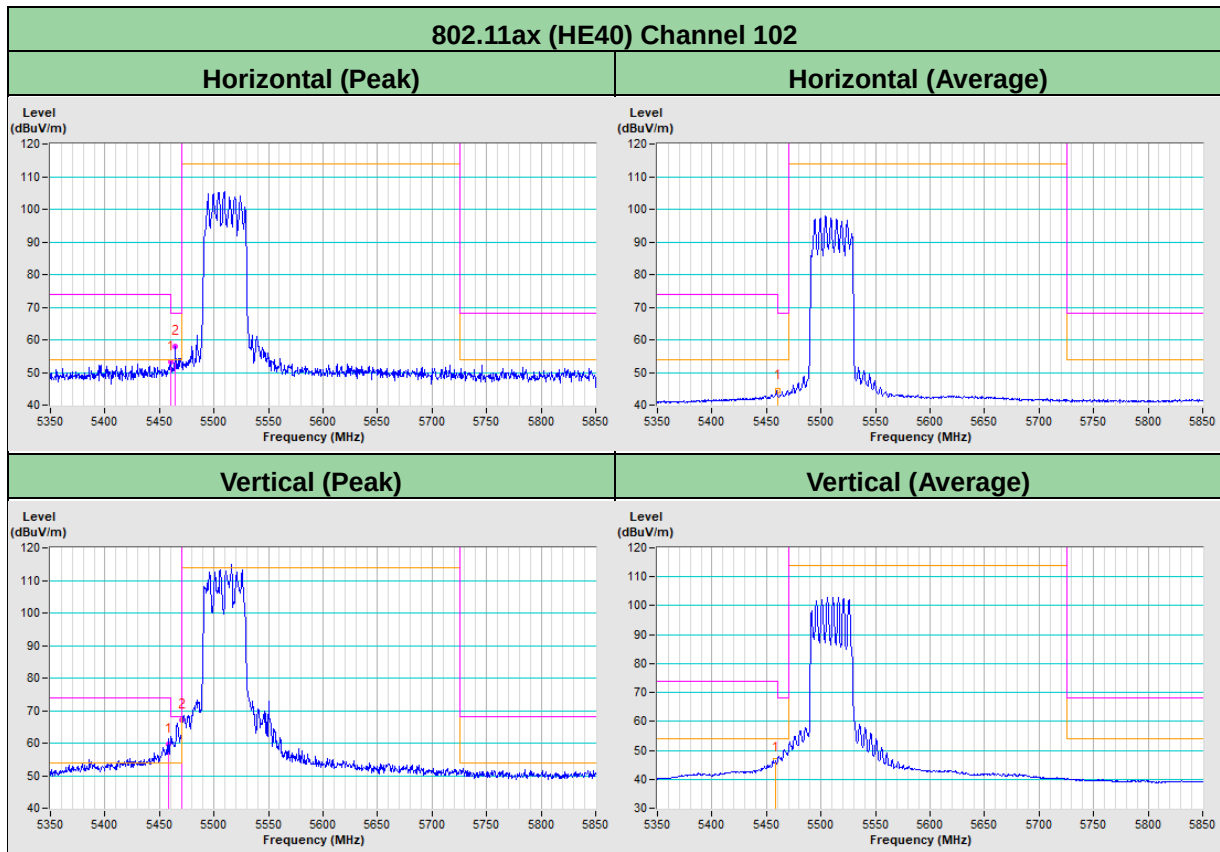


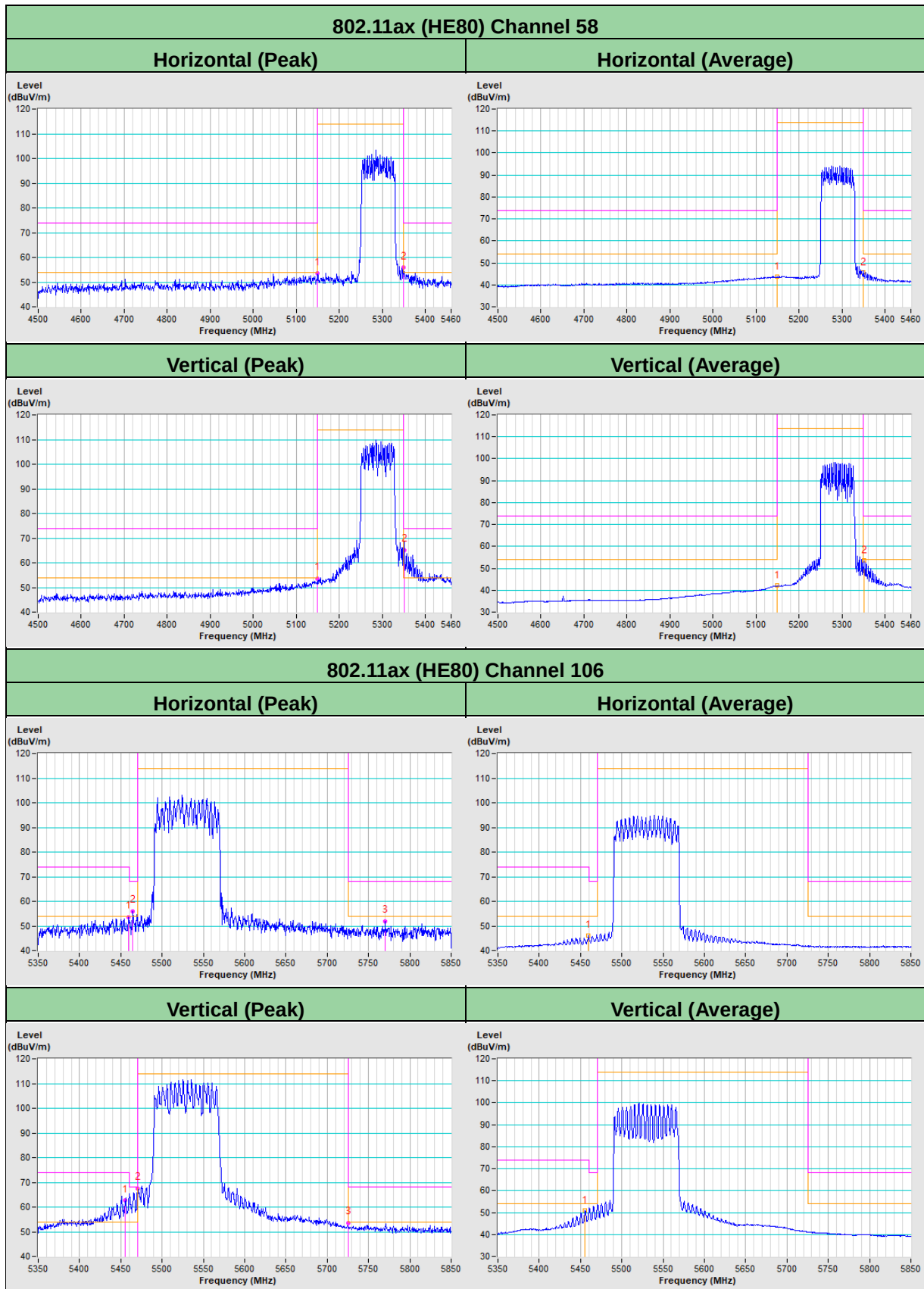


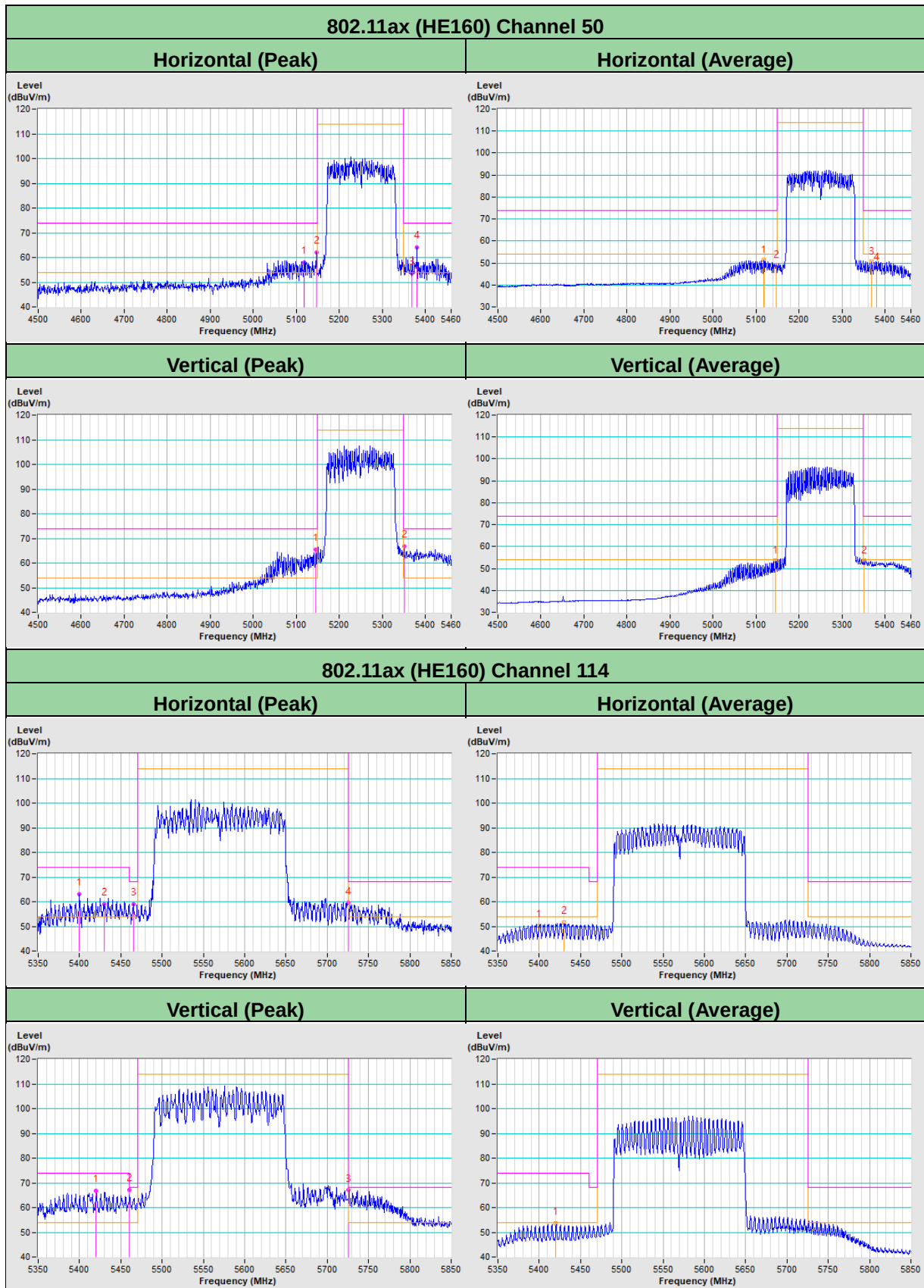












Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Lin Kou EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

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